



INSTITUTE FOR DEFENSE ANALYSES

**Nuclear, Chemical and Biological
Education and Training: A Review Across
the Services and Joint Community**

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PREFACE

This document reports work performed by the Institute for Defense Analyses for the Office of the Special Assistant for Chemical-Biological Defense and Chemical Demilitarization Programs in fulfillment of the task “Joint Training and Certification for Nuclear, Chemical and Biological Defense.” It reviews nuclear, chemical, and biological (NCB) education and training doctrine, activities, and certification across the Services and the Joint community. This document focuses, in particular, on passive defense and, in that context, identifies gaps and recommendations, as well as areas for further research in NCB education and training.

The authors wish to thank MG (Ret.) Gerald Watson, Dr. Ron Smith, Mr. G.A. Redding, Mr. Fred Celec, and Ms. Margaret Porteus for their careful review of this document, and Ms. Shelley Smith for her editorial assistance.

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EXECUTIVE SUMMARY

U.S. House of Representatives Report 109-452 requires the Assistant to the Secretary of Defense for Nuclear, Chemical and Biological Programs, in coordination with the Secretaries of the Army, Navy, and Air Force, to perform a gap analysis on nuclear, chemical, and biological (NCB¹) defense training, to review NCB defense doctrine across each of the military Services, and to make recommendations regarding the implementation of Joint training, certification, and doctrinal alignment for NCB defense for both the Active and Reserve components. (See Exhibit ES-1.) This paper focuses on NCB passive defense doctrine, education, and training for Active and Reserve components and National Guard forces in each of the Services.

Joint Training and Certification for Nuclear, Chemical, and Biological Defense

The 2006 Quadrennial Defense Review (QDR) envisioned the future force would be organized, trained, equipped, and resourced to deal with all aspects of the threat posed by weapons of mass destruction; but the QDR provided no insight into how the Department of Defense will achieve its nuclear, chemical, and biological defense training objective. Therefore, the committee directs the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs, in coordination with the Secretary of the Army, Secretary of the Navy, and Secretary of the Air Force, to perform a gap analysis on nuclear, chemical, and biological (NCB) defense training, to review NCB defense doctrine across each of the military services, and to make recommendations to the Secretary of Defense, the Senate Committee on Armed Services and the House Committee on Armed Services by October 1, 2007, regarding the implementation of joint training, certification, and doctrinal alignment for NCB defense for both the active and reserve components.

—*House Report 109-452 – National Defense Authorization Act for Fiscal Year 2007, Report of the Committee on Armed Services, House of Representatives, on H.R. 5122, 5 May 2006, p. 373.*

Exhibit ES-1. Congressional Language Pertaining to National Defense Authorization Act for Fiscal Year 2007 Report to Accompany H.R. 5122

The use of nuclear, chemical, or biological weapons against U.S. forces has long been a concern of the military. Over the past 6 years, seven separate national strategy documents, as well as numerous other documents, have addressed concerns regarding

¹ Several different acronyms are currently used to describe NCB, including chemical, biological, radiological, and nuclear (CBRN), chemical, biological, radiological, nuclear, and (high yield) explosives (CBRNE), and nuclear, biological, and chemical (NBC), as well as chemical biological (CB), Weapons of Mass Destruction (WMD), Counter-CBRN, (C-CBRN) and CBRN Defense (CBRND). For the purposes of this document, these terms all refer to NCB. Although *Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms* suggests either NBC or CBRN, NCB was selected as the appropriate acronym for inclusion in this document, as it is the acronym used in the House Report language shown in Exhibit ES-1.

weapons of mass destruction (WMD) and the military's role in "dissuading, deterring, and defeating those who seek to harm the U.S. directly, especially extremist enemies with WMD."²

Similarly, the education and training needed to prepare for, respond to, and operate in the presence of NCB hazards has been a topic of discussion among the Services, the Joint community, and other federal organizations for at least two decades. More than 20 studies focusing, at least in part, on NCB doctrine, education, and training have been conducted in the last 20 years; 6 additional studies are ongoing at present. Many additional publications, reports, instructions, directives, and papers have also addressed this subject.

The objective of this study is to determine whether training for U.S. Service members (active, reserve, and national guard), within their particular Services and job specialties, aligns with Joint and Service doctrine addressing all aspects of passive defense; that is, the skills and capabilities that Service members are required to have to minimize or negate their vulnerability to NCB hazards. In particular, this study addresses questions in four areas. The questions and the study's general answer to each question are below.

1. What are the Joint and Service doctrines for CBRN education and training?

The Joint and Service doctrine, as well as Service requirements, are the skills and capabilities that each Service member or unit must establish to minimize or negate the effects of the hostile use of NCB. They are outlined in Chapter 5. The doctrine and requirements appear to be mostly complete, with only minor gaps.

2. Do the Services' education and training objectives meet the requirements as set forth in the Joint and Service doctrines?

The Services generally have met the requirements placed on them by Joint, multi-Service and Service specific doctrine, with one notable exception. Naval doctrine and requirements appear to omit certain aspects of Joint doctrine and multi-Service tactics, techniques, and procedures (TTPs).

3. Are schools, classes, practicals, drills, and exercises employed by the Services to ensure that CBRN education and training requirements are met?

All the Services have implemented processes to meet their own requirements. Education and training are discussed in Chapter 6. While there appears to be a

² Department of Defense. *National Defense Strategy of the United States of America*. Washington, DC: March 2005, p. iv.

coherent link implementing doctrine through education and training for individuals and NCB Specialist (non-medical), the links between NCB medical doctrine and the associated education and training are less clear.

4. Does each Service assess Service member performance in CBRN environments under realistic conditions through tests, inspections, evaluations and exercises?

The Services use multiple methods to assess the performance of individual personnel, teams and units. The lack of realism for unit based training has been noted as a continuing problem.

To facilitate answering these questions, the Services and other organizations participating in NCB doctrine, education, training, and certification provided points of contact and substantive information that the study team used in addition to information collected in literature reviews and interviews with subject matter experts to assess the current status of NCB passive defense doctrine, education, training and certification. Due to the limited study time frame, the study team relied on the information that was attainable with the assistance of the Services and other military organizations, but we were unable to assess NCB education and training down to the curriculum level. Additionally, policy-level organizations and doctrine were considered outside the scope of the study, as defined by the legislative language; also outside the scope were the Combatant Commands.

Consistent with U.S. Code Title X, and as reiterated in *Joint Publication 3-11 (JP)*, *Joint Doctrine for Operations in Nuclear, Biological, and Chemical (NBC) Environments*, the Services are responsible for training their individual Service members.³ Certain terms mean different things to different Services, and, consequently, we provide the following definitions used for this study:

- **Passive defense:** Measures taken to reduce the probability of and to minimize the effects of damage caused by hostile action without the intention of taking the initiative;⁴ non-medical and medical measures to minimize or negate the vulnerability and effects of CBRN threats employed against U.S. forces.⁵

³ Joint Chiefs of Staff, Department of Defense. *Joint Publication 3-11, Joint Doctrine for Operations in Nuclear, Biological, and Chemical (NBC) Environments*. Washington, DC, 11 July 2000.

⁴ Joint Chiefs of Staff. *Joint Publication, JP 1-02, Department of Defense Dictionary of Military and Associated Terms*. 12 April 2001, as amended through 22 March 2007. p. 406.

⁵ Chairman of the Joint Chiefs of Staff, Department of Defense. *National Military Strategy to Combat Weapons of Mass Destruction*. Washington, DC, 13 February 2006, p. 10.

- **Doctrinal alignment:** the extent to which each Service’s training and education requirements meet the intent of Service and Joint doctrine.
- **Certification:** the methods and processes used by the Services and subordinate commands for education and training that validate Service members’ competency to operate in a CBRN environment.
- **Joint training:** the Joint and Service schools and other institutional educational material and procedures, training tasks, and exercises which are implemented in a Joint context. Joint training encompasses individual, staff, and collective training.⁶ For the purposes of this study, Joint training incorporates the education, exercises, and training, as conducted by the Services and within a Joint context, that relate to NCB passive defense.

Though the Services have different missions and different ways of training and educating their members, many of the basic NCB passive defense skills, capabilities, and standards of proficiency required for individual Service members are common, as outlined in the multi-Service Tactics, Techniques, and Procedures (TTPs) manuals. Skills for NCB Specialists (non-medical) do vary,⁷ as might be expected, in part due to the varying Service missions and operating areas, whereas the standards of proficiency for NCB Specialists (medical) appear similar, at least in terms of the advanced training for treating NCB casualties.

Similarly, certification processes vary by Service, but each Service utilizes a combination of classroom education and familiarization, written and oral exams, and practicums, drills, and exercises, to evaluate proficiency and ensure the required capabilities are achieved.

Utilizing the four study questions as a framework and analyzing the data collected, the study team identified a number of gaps and made several observations.⁸

⁶ Chairman of the Joint Chiefs of Staff. Instruction (CJCSI) 3500.1D, *Joint Training Policy and Guidance for the Armed Forces of the United States Military*. 31 May 2007, p. C-2.

⁷ For the purposes of the study, two types of NCB specialists are identified: 1) non-medical specialists are those with an NCB job specialty code, military occupational specialty, or enlisted code or those requiring special NCB education and training due to tasking, collateral duty, or billet; and 2) medical specialists are those patient-care providers who have or require additional education or training in NCB hazards and treatment.

⁸ Identified gaps recognize areas where something clearly is missing and needs to be rectified—for example, an area of doctrine that should be included but is not, or a requirement that is not specified for a class that already exists. Observations are additional study findings. The gaps, observations, and recommendations noted are those highlighted by the study team, study advisors, and subject matter experts and are discussed in more detail within the study. Additional study findings are identified in Appendixes D and E.

The following discussion highlights the major gaps and associated study recommendations. Additional gaps and observations are noted in the study.

A. STATUS OF NCB PASSIVE DEFENSE EDUCATION AND TRAINING

Overall, each Service ensures that its personnel receive the education and training to develop the necessary skills for NCB passive defense. Education and training occur in a variety of locations and at a variety of levels. Certifications are validated by examination, evaluation, practicum, and other methods, and recertification is accomplished on differing cycles by Service.

Given that the NCB passive defense requirements vary somewhat by Service,⁹ the study team finds, and recommends as applicable, the following regarding opportunities for Joint education and training:

1. The Services investigate opportunities for Joint NCB passive defense EDUCATION by leveraging existing curricula or developing new education courses.
2. NCB passive defense individual and unit TRAINING should continue to be conducted at the Service level; where applicable, specialized Joint TRAINING for both individuals and units should continue to be conducted and potentially expanded to take advantage of facilities, training centers, subject matter experts, etc.
3. Advanced Medical NCB passive defense EDUCATION and TRAINING (i.e., field medic training) should be conducted at the Joint level. As applicable, Service-specific medical NCB education and training should be conducted at the Service level.

⁹ *Joint Publication (JP) 1-02, Department of Defense Dictionary of Military and Associated Terms*, defines “military requirement” as “an established need justifying the timely allocation of resources to achieve a capability to accomplish approved military objectives, missions, or tasks.”

B. JOINT AND SERVICE DOCTRINES FOR NCB PASSIVE DEFENSE EDUCATION AND TRAINING

Gap: There is general doctrine lag, and classification restrictions which prevent the consideration of advanced NCB threats and hazards in NCB passive defense education and training.

Recommendations:

1. The Services should implement existing processes to integrate new information, doctrine, TTPs, standards of proficiency, education, and training prior to doctrine updates; supplement these processes as required.¹⁰
2. The Joint Requirements Office (JRO), in conjunction with the Services, the Defense Threat Reduction Agency (DTRA), the intelligence community, and other appropriate organizations, should conduct a risk assessment to determine which Non-Traditional Agents (NTAs) and other classified hazards present a threat that should be addressed in NCB passive defense doctrine. The JRO, in conjunction with the Services, DTRA and other appropriate organizations should then determine, for those agents that should be discussed, what information should be declassified and incorporated into doctrine, TTPs, training, and education versus the requirements for protection of intelligence information and the risks of possible proliferation, in accordance with its responsibilities as laid out in the Implementation Plan for the Management of the Chemical Biological Defense Program.¹¹

Gap: The Navy CBRN defense doctrine and requirements appear to omit certain elements of Joint doctrine and multi-Service tactics, techniques, and procedures.

Recommendation: The Navy should review and update existing Service doctrine, requirements, and training manuals to insure that provided CBRN defense training is aligned with Joint doctrine and multi-Service tactics, techniques, and procedures and to reflect exceptions as necessary.

¹⁰ Ibid. With respect to new equipment training, the JPEO-CBD noted that they are making efforts to include the Services, schools, and trainers in the new equipment training development process.

¹¹ *Implementation Plan for the Management of the Chemical Biological Defense Program*. Washington DC: April 2003, p. 3

Aldridge memo. Op. cit.

C. ALIGNMENT OF SERVICES' EDUCATION AND TRAINING OBJECTIVES WITH JOINT AND SERVICE REQUIREMENTS

Gap: Military NCB medical advanced education and training for patient care providers exists but lacks a Service requirement. In practice, *very few Service healthcare providers are required to attend the advanced-level courses.*

Recommendation: OSD(HA), the Services, and the Service Surgeon Generals should identify the advanced NCB medical knowledge required for patient care providers and determine how that requirement could best be met. In particular, identify whether the advanced NCB medical education and training may be met via the three professional-level courses (Field Management of Chemical and Biological Casualties (FCBC), Medical Management of Chemical and Biological Casualties (MCBC), and Medical Effects of Ionizing Radiation (MEIR)) or other courses (if such a requirement exists).

D. NCB EDUCATION AND TRAINING SCHOOLS, CLASSES, PRACTICALS, DRILLS, AND EXERCISES

Gap: Currently, only 7 NCB medical education courses, of over 160 with some NCB content, are validated by Defense Medical Readiness Training Institute (DMRTI) to meet Joint and Service educational requirements.

Recommendations:

1. The Force Health Protection Council (FHPC) should ensure Joint and Service medical NCB doctrine and standards for patient care providers are established, standardized and consistent for core knowledge and advanced, professional education and training.¹²
2. The FHPC should exercise the existing Joint process for coordination and integration of core and advanced NCB medical education and training to maximize existing Service strengths and identify additional training requirements.
3. The Tri-Service [Medical] CBRNE Training Committee should review NCB components of additional Joint and Service military medical courses and validate or recommend modifications in accordance with DMRTI-promulgated Standards of Proficiency and metrics.¹³

¹² Assistant Secretary of Defense for Health Affairs. Policy on Military Health System Decision-Making Process. Memorandum. Washington, DC: 22 March 2006.

¹³ DMRTI. *Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives (CBRNE) Training – Standards of Proficiency and Metrics*. San Antonio, TX: 1 October 2003.

E. PERFORMANCE ASSESSMENT AND CERTIFICATION IN NCB ENVIRONMENTS UNDER REALISTIC CONDITIONS

Gap: While certification processes exist, concerns remain regarding whether unit and collective assessments of training and exercises are conducted under realistic conditions.

Recommendation: The Services should place increased emphasis on realistic NCB unit training and exercise certification and assessment.

Gap: Integration, standards, certification, and governance of NCB medical education efforts in DOD and the Services are fragmented and incomplete.

Recommendation: The Services should establish certification and tracking of military healthcare providers for advanced NCB medical training and education.

I. INTRODUCTION

U.S. House of Representatives Report 109-452 requires the Assistant to the Secretary of Defense for Nuclear, Chemical and Biological Programs, in coordination with the Secretaries of the Army, Navy, and Air Force, to perform a gap analysis on nuclear, chemical, and biological (NCB¹) defense training, to review NCB defense doctrine across each of the military Services, and to make recommendations regarding the implementation of Joint training, certification, and doctrinal alignment for NCB defense for both the active and reserve components. (See Exhibit I-1.) This paper focuses on NCB passive defense doctrine, education, and training for Active and Reserve components and National Guard forces in each of the Services.

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other documents, have addressed concerns regarding weapons of mass destruction (WMD) and the military's role in "dissuading, deterring, and defeating those who seek to harm the U.S. directly, especially extremist enemies with WMD."²

Similarly, the education and training needed to prepare for, respond to, and operate in the presence of NCB hazards have been discussed among the Services, the Joint community, and other federal organizations for at least two decades. Following Desert Storm in 1991, and in almost every year since, the Government Accountability Office (GAO) has assessed some aspect of NCB doctrine, education, training, or readiness. The military—including but not limited to the Inspectors General, the Joint Staff, the Services, and other military organizations—has conducted at least as many studies on similar subjects. In the last three years alone, more than five studies evaluating various aspects of NCB education and training have been completed.

NCB education and training covers an extremely broad area, however, and is incorporated into each of the Combating WMD military mission areas:

- Offensive Operations
- Elimination Operations
- Interdiction Operations
- Active Defense
- Passive Defense
- WMD Consequence Management
- Security Cooperation & Partnership Activities
- Threat Reduction Cooperation³

There is overlap among and across each of these mission areas. For example, military forces conducting consequence management activities may take active or passive defense measures.

In order to complete the directed study within the specified time, the scope was narrowed to focus on the Combating WMD passive defense military mission area. Thus, for the purposes of this study, the study team used the following definitions, which apply

² Department of Defense. *National Defense Strategy of the United States of America*. Washington, DC: March 2005, p. iv.

³ Chairman of the Joint Chiefs of Staff, Department of Defense. *National Military Strategy to Combat Weapons of Mass Destruction*. Washington, DC: 13 February 2006, p. 7.

to the House Report language shown in Exhibit I-1. This and other applicable legislative language are presented more fully in Appendix A:

- **Passive defense:** Measures taken to reduce the probability of and to minimize the effects of damage caused by hostile action without the intention of taking the initiative;⁴ non-medical and medical “measures to minimize or negate the vulnerability and effects of CBRN threats employed against U.S. forces.”⁵
- **Doctrinal alignment:** the extent to which each Service’s training and education requirements meet the intent of Service and Joint doctrine.
- **Certification:** the methods and processes used by the Services and subordinate commands for education and training that validate Service members’ competency to operate in a CBRN environment.
- **Joint training:** the Joint and Service schools and other institutional educational material and procedures, training tasks, and exercises, which are implemented in a Joint context. Joint training encompasses individual, staff, and collective training.⁶ For the purposes of this study, Joint training incorporates the education, exercises and training, as conducted by the Services and within a Joint context, that relate to NCB passive defense.

Passive defense comprises the skills, capabilities, and proficiencies that every Service member is required to attain to facilitate their efforts to minimize or negate the effects of NCB threats employed against them. These critical skills, including donning personal protective equipment (PPE), contamination identification and avoidance, warning and response, among others, enable Service members to take action to defend themselves in the event of an NCB threat and allow them to continue operations in NCB environments. However, these capabilities extend beyond the NCB passive defense realm. They are the skills and proficiencies that also minimize the effects of NCB threats to Service members conducting operations within several other Combating WMD military mission areas by educating Service members to the nature of the threat and training them to conduct the same protective actions. This study focuses on NCB passive defense because every Service member must demonstrate these capabilities and because these skills provide the foundation for the other Combating WMD military mission areas.

⁴ Joint Chiefs of Staff. *Joint Publication, JP 1-02, Department of Defense Dictionary of Military and Associated Terms*. 12 April 2001, as amended through 22 March 2007. p. 406.

⁵ Ibid., p. 30.

⁶ Chairman of the Joint Chiefs of Staff. Instruction (CJCSI) 3500.1D, *Joint Training Policy and Guidance for the Armed Forces of the United States Military*. 31 May 2007, p. C-2.

NCB passive defense doctrine is contained in a series of Joint publications. This doctrine is elaborated on in a series of Multi-Service tactics, techniques and procedures (TTPs) manuals written by the Services and approved by each Service Chief.⁷ These publications list capabilities—not training—that must be demonstrated by the individual Service member (every soldier, sailor, airman, and Marine); those with specialized roles, including commanders, advisors, and specialists; and units. It is thus the responsibility of the Services, per Title X of the U.S. Code, to dictate the applicable individual and collective training and education required to develop and sustain these NCB passive defense capabilities. Although the responsibility for education and training lies solely with the Services, other offices and organizations participate in NCB doctrine, education, and/or training (Appendix B includes a list of several participating organizations). These participants help develop doctrine and requirements,⁸ provide education and training, act as certifying authorities, review NCB education and/or training, and play other roles in the NCB education and training community.

The objective of this study is to determine whether training for U.S. Service members (Active, Reserve, and National Guard), within their particular Services and job specialties, aligns with Joint and Service doctrine addressing all aspects of passive defense against the NCB threat. This report reviews the doctrine and requirements for NCB passive defense capabilities, identifies the education and training provided to ensure the development of required capabilities, and notes the methods for certification and recertification utilized in conjunction with NCB passive defense education and training. Further, it identifies gaps within and across each area and makes recommendations where applicable.

Chapter 2 briefly reviews the history of NCB education and training as summarized in studies conducted by the military, the GAO, and other organizations and introduces other ongoing studies that address aspects of NCB education and training.

⁷ The doctrine and governing publications, including *Joint Doctrine for Operations in Nuclear, Biological, and Chemical (NBC) Environments* (Joint Publication (JP) 3-11) and *Multi-Service Publication, Field Manual (FM) 3-11/Marine Corps Warfighting Publication (MCWP) 3-37.1/Naval Warfare Publication (NWP) 3-11/Air Force Tactics, Techniques, and Procedures (AFTTP)(I) 3-2.42, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical Defense Operations* (FM 3-11), are listed in Chapter V, Table V-1 and Appendix G.

⁸ *Joint Publication (JP) 1-02, Department of Defense Dictionary of Military and Associated Terms*, defines a military requirement as “An established need justifying the timely allocation of resources to achieve a capability to accomplish approved military objectives, missions, or tasks.”

Joint Chiefs of Staff. *Joint Publication, JP 1-02*. Op. cit. p. 342.

Appendix C provides a chronological listing of relevant studies. Chapter 3 provides definitions of terms in the House Report language and other terms applicable to NCB education and training. Chapter 4 briefly outlines the study methodology and identifies the assumptions and limitations of this study. The discussion of Service and Joint doctrine and requirements (Chapter 5), existing education and training activities (Chapter 6), and applicable certification efforts (Chapter 7) provides the basis for the identified gaps and recommendations described in Chapter 8. Appendixes D and E (available upon request) provide additional information and work collected in the compilation of this report. Appendix F defines acronyms and abbreviations use in this report, and Appendix G provides bibliographic information for the publications used in this study.

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II. HISTORY

Chemical, biological, radiological, and nuclear defense and the associated doctrine, education, training, and certification have long been issues of concern for the government, DoD, and the Services. In the last 20 years, more than 20 studies dedicated primarily to nuclear, chemical, and biological (NCB) education and training have been conducted by or for the Government Accountability Office (GAO), the Department of Defense (DoD) and Service Inspector Generals, the Chemical and Biological Defense Program (CBDP), the Joint Requirements Office for Chemical, Biological and Nuclear Defense (JRO-CBRND), and the Services.⁹ At present, at least 6 studies are ongoing to address various aspects of NCB education and training.

Some of the studies identify problem areas and are therefore important to understanding the current status of NCB doctrine, education, training and certification. Some focus on the entire military, while others focus on only a limited community, area, or organization. We summarize a select few of these studies below and briefly introduce the ongoing studies we are aware of.

A. NCB EDUCATION AND TRAINING REPORTS AND STUDIES

1. Department of Defense Chemical and Biological Defense Program Annual Report to Congress

Every year, the CBDP is required to provide a report to Congress discussing program management and oversight; requirements, research, development, and acquisition programs; logistics status; and education, training, and doctrine.¹⁰ Chapter 4 of the report, which is a compilation of Service responses regarding the current status of education, training, and doctrine, identifies current courses, status of training efforts, individual and unit training activities, exercises, doctrine, and outstanding issues.¹¹

⁹ A listing of NCB-related training and education studies is included in Appendix C.

¹⁰ *United States Code, Title 50, Chapter 32, Section 1522 (Sec. 1522)*. Washington, DC: 2 January 2006. <http://uscode.house.gov/> (accessed 10 June 2007).

¹¹ Chapter 4 of the report to Congress was prepared by the Chemical, Biological, Radiological, and Nuclear (CBRN) Defense Education and Training Integration Directorate in the Office of the Special Assistant for Chemical Biological Defense and Chemical Demilitarization Programs.

This year's report to Congress identified five issues:

- Need for Combating-chemical, biological, radiological, and nuclear (C-CBRN) education, training and exercises (ETE) focused on airlift and air refueling operations for Air Mobility Command (AMC) and the Air Force.
- Need for tri-Service CBRN defense medical readiness and training.¹²
- Need for an integrated process team (IPT) to discuss issues and solutions that will improve the effectiveness of CBRN defense training and education
- Lack of a consistent and standardized system within DoD to educate, train, and exercise CBRN defense.
- CBRN defense training and education does not have a central information source.¹³

Efforts are being made by all appropriate organizations to act on these issues as noted in Chapter 4 of the DoD CBRND Annual Report to Congress.

2. Joint Requirements Office – Passive Defense Capabilities-Based Assessment

The Passive Defense Capabilities-Based Assessment (CBA) was conducted and published by Battelle in 2005 for the JRO-CBRND. The document spans over 2,000 pages in 17 chapters, enumerating subjective analysis conducted across the levels of war—Strategic, Operational, and Tactical—and applied over the JRO-CBRND's 4-S construct of Sense, Shape, Shield, and Sustain. The 4-S construct encompasses all aspects of passive defense and many other bigger and broader Universal Joint Task List (UJTL) linked items that traditionally are not considered passive defense. The document summarizes capabilities in charts characterizing capability over time and status expressed in terms of red, amber, and green ratings. Each chapter identifies gaps in doctrine and training capabilities and required solutions. The document lists more than 1700 gaps; it is important to note, however, that many of these gaps are not specific to passive defense.

¹² This annual report provides the status associated with this issue. Currently core knowledge requirements have been established and promulgated via the Defense Medical Readiness and Training Institute's (DMRTI) standards of proficiency. In conjunction with the JRO-CBRND and the integrated concept team, they are also working to establish advanced knowledge requirements.

¹³ Office of the Under Secretary of Defense for Defense Acquisition, Technology, and Logistics. *Department of Defense Chemical and Biological Defense Program, Annual Report to Congress*. Washington, DC: April 2007, p. 126-7.

3. Defense Medical Readiness and Training Institute – CBRNE Training Commonalities and Gaps

The Defense Medical Readiness and Training Institute (DMRTI) established a multi-Service group to identify commonalities, redundancies, and inefficiencies in CBRNE medical training in response to a memo from the Assistant Secretary of Defense for Health Affairs (ASD(HA)). Information was assessed based on level of training, target audience, and course availability. The study found that despite the availability of training for healthcare providers, “course allocations are not sufficient to provide the training to the majority of providers... An appropriate level of training is not being conducted for first responders, medical planners, and non-medical personnel assigned to medical units.”¹⁴

4. Nuclear, Biological, and Chemical Defense Medical Training and Doctrine Analysis

This study was performed for the JRO-CBRND. The study indicated concerns regarding “loosely coordinated and monitored NBCD [nuclear, biological, and chemical defense] medical training”¹⁵ as a result of unclear, inconsistent doctrine and standards, as well as poor programs for developing NBCD medical skills. The study suggested a roadmap for achieving “quality NBCD medical training,” including coordinating tri-Service cooperation in coordinating doctrine and medical education and training reporting, as well as leveraging the DMRTI standards of proficiency as the basis for medical NBCD training requirements.

5. Government Accountability Office Reports

Between February 1991 and January 2007, nine GAO reports on various NCB defense topics were submitted to various congressional committees in response to their request for information. While several other studies looking at NCB were conducted during this time period, the nine reports discussed below focused primarily on passive defense training and readiness. Many of the reports examined Army and Marine Corps units, but some also included the Air Force and Navy. Reports looked at both Active and

¹⁴ Defense Medical Readiness Training Institute. *Cross Service Identification of Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives (CBRNE) Training Commonalities and GAP Analysis Report*. Fort Sam Houston, TX: 10 December 2002, p. 2.

¹⁵ Booz Allen Hamilton. *Training and Doctrine Analysis Report: Nuclear, Biological, and Chemical Defense (NBCD) Medical Training and Doctrine Analysis. For The Joint Requirements Office for Chemical, Biological, Radiological, and Nuclear Defense (JRO-CBRND)*. McLean, VA: 19 December 2003. p. ES-1.

Reserve component units. Most reports looked at combat, combat support, and combat service support units; but one looked at medical readiness and another addressed National Guard Bureau (NGB) Weapons of Mass Destruction Civil Support Teams (WMD-CSTs) (Table II-1). In the following discussion, these reports will be referred to by the appropriate date of publication.

Table II-1. GAO Reports on Various NCB Defense Topics

Date of Publication	GAO No.	Report Title
Feb 1991	GAO/NSIAD -91-72	Army Training: Evaluations of Units' Proficiency are Not Always Reliable
May 1991	GAO/NSIAD -91-197	Chemical Warfare: Soldiers Inadequately Equipped and Trained to Conduct Chemical Operations
Mar 1996	GAO/NSIAD -96-103	Chemical and Biological Defense: Emphasis Remains Insufficient to Resolve Continuing Problems
May 2000	GAO/NSIAD -00-97	Weapons of Mass Destruction: DOD's Actions to Combat Weapons Use Should Be More Integrated and Focused
Nov 2000	GAO-01-27	Chemical and Biological Defense: Units Better Equipped, but Training and Readiness Reporting Problems Remain
Oct 2001	GAO-02-38	Chemical and Biological Defense: DoD Needs to Clarify Expectations for Medical Readiness
Jan 2005	GAO-05-8	Chemical and Biological Defense: Army and Marine Corps Need to Establish Minimum Training Tasks and Improve Reporting for Combat Training Centers
May 2006	GAO-06-498	Homeland Defense: National Guard Bureau Needs to Clarify Civil Support Teams' Mission and Address Management Challenges
Jan 2007	GAO-07-143	Chemical and Biological Defense: Management Actions Are Needed to Close the Gap between Army Chemical Unit Preparedness and Stated National Priorities

Based on a review of the findings in all reports, the study team determined that the findings could be placed into several categories addressed over time and relevant to passive defense doctrine, education, training, and certification. These categories included: readiness, doctrine, education, training, staffing, and equipment. Other areas were addressed in the GAO reports but are not discussed below.

Doctrine. In May 1991, the GAO noted that chemical warfare doctrine was not incorporated into the manuals and training of other branch schools. By March 1996, the Services were issuing policy statements on the importance of chemical and biological readiness and were revising doctrinal and training regulations. Improvements continued as noted in the May 2000 report, which noted that several publications were under revision and being developed to fill voids in Joint doctrine. Additional reports showed continued efforts to incorporate doctrine; the report of May 2006 indicated the Army's Maneuver Support Center was assisting in the development of WMD-CSTs for National Guard units, while in January 2007 the Army Chemical School was in the process of revising doctrine to include doctrine for homeland defense.

Training. Of the NCB defense topics that GAO addressed, training was one of those reported on most often and was central to most of the findings. For a better understanding of the training issues, training is further divided into sub-categories—Education, Joint and Service Training, Unit Training, Individual Training, Training Realism, and Command and Control.

Education. Findings related to education focused on medical and WMD-CST education. In October 2001, the GAO identified numerous specialized CB courses for medical personnel but found that they were voluntary and that no more than 19 percent of healthcare providers had completed any specialized chemical biological (CB) medical training. Only 2.2 percent of medical officers had completed the full 7-day course in Medical Management of Chemical and Biological Casualties (MCBC).¹⁶ This was consistent with previous findings from March 1996 that methods to ensure medical personnel receive CB training needed improvement, and that only a limited number of physicians assigned to or designated to deploy with Army units had completed medical officer advanced and casualty management courses.

Although focusing on a different subset of the military population, education was also discussed with respect to the WMD-CSTs when, in May 2006, GAO noted that WMD-CST personnel receive extensive individual education and training in the first two years, from 376 to 1,148 hours depending on their duty position.

Joint/Service Training. In March 1996, the GAO noted that Joint exercises include very little CB defense training because commanders-in-chief, or CINCs (now combatant commanders), assigned it a lower priority compared with other issues related to their mission, and they considered CB training a Service responsibility. In May 2000, GAO noted that each of the Services had a list of NCB-related mission-essential tasks that needed to be performed. Despite the two previous reports, in October 2001, the GAO found that there was a gap in DoD's appraisal of the CB threat and their medical preparedness to meet them. CINCs rarely exercised CB medical readiness, and only a limited number of units participated in Service CB exercises.

Unit Training. This subcategory had more GAO findings than any other category or subcategory and was addressed in seven of the nine reports. In the February 1991 report, the GAO noted that most units were not evaluated in their mission-essential NCB

¹⁶ At the time of the noted GAO report, MCBC was seven days in length. The course has since been shortened to five days.

tasks. In May 1991, GAO indicated that chemical proficiency testing was not a critical part of unit evaluations; commanders discouraged the integration of CB exercises with mission-related exercises because it reduced mission performance. As a result, chemical training focused on key events rather than sustaining proficiency, and units could not perform NCB collective tasks and appeared to be unfamiliar with chemical equipment. In March 1996, the GAO noted that little or no training was being conducted on casualty decontamination from CB agents at most early deploying divisions and medical units. The May 2000 report notes that DoD had taken action to increase NCB warfare emphasis in training, exercises, and education, but in November 2000 the GAO noted that although policies require CB defense to be fully integrated into readiness training, CB defense training continued to be a problem area. The January 2005 report reiterated the same problem: doctrine, regulations, and orders stressed the need to fully integrate NCB training, but no minimum NCB training tasks had been established for units conducting training at the Army and Marine Corps Combat Training Centers (CTCs). Additional issues were noted regarding the failure to incorporate lessons learned from Iraq and Afghanistan and failures to ensure that units completed NCB tasks to a minimum standard of proficiency or could build on those tasks to accomplish more difficult tasks in NCB environments. For example, no NCB training was conducted during combined arms exercises at the Marine Corps CTC for at least five years prior to the review.

The situation has proven different for the WMD-CSTs for which the certification is required per legislative language. In May 2006 the GAO found that WMD-CSTs were ready to conduct their missions and that units completed an initial external evaluation and similar evaluations every 18 months thereafter, as well as 12 collective training events each year.

Individual Training. Most individual training deficiencies related directly to training realism. In February 1991, GAO found that units did not train in their protective suits because the suits were hot and hampered the soldier's efficient performance of tasks. In May 1991, the GAO noted again that Army standards for training in full chemical protective gear were not being met. Because of inadequate training, Service members could not perform combat operations in full gear for extended periods. A decade later, in October 2001, the same problem was noted for medical personnel. Despite Service requirements for medical personnel to receive familiarization with personal protection for NCB environments, few military healthcare providers were trained to a standard of proficiency in providing care to NCB casualties.

Training Realism. In addition to individual training failures, both the February and May 1991 reports indicated that home station training for active Army units either did not include integrated NCB training or did not take place in realistically simulated chemical environments. National Guard units could not conduct realistic training due to a shortage of individual and unit NCB equipment that resulted in an inability to conduct most NCB tasks. Again, in November 2000 the GAO found that training was not fully integrated and lacked realism, and in October 2001 they noted that no realistic field exercises of medical support for NCB warfare had been conducted.

Command and Control. In May 1991 the GAO found that training problems were caused by insufficient command emphasis and there was little incentive to conduct training under chemical conditions. This was evident again in March 1996 when GAO observed that U.S. forces continued to experience serious training-related weaknesses in NCB proficiency at the commander, unit, and individual levels and an inability to perform basic skills necessary to survive and operate in an NCB environment.

Readiness. Five of the GAO reports commented on readiness. In February 1991, the GAO found that annual 1-R evaluations of National Guard battalions reflected general and conflicting information. CTC evaluations of unit performance of NCB tasks indicated units were less ready than reported by commanders in quarterly training readiness assessments. The March 1996 report indicated that the effectiveness of the Status of Resources and Training System (SORTS) for evaluating unit NCB readiness was limited and depended on the commander's emphasis in that area. However, the GAO noted in May 2000 that each of the Services has taken steps to increase the NCB training it provides as well as enhance its NCB readiness. In October 2001, the GAO determined that training requirements for medical personnel needed to be more clearly defined, and that tracking systems to identify medical personnel who had received training either did not exist or were not functioning. In January 2007, the GAO found that Army National Guard and Reserve chemical companies reported low readiness levels due to personnel and equipment shortages and an inability to conduct collective training. This hindered their ability to perform both wartime and homeland defense missions.

B. ONGOING STUDIES

In addition to the more than 20 studies that have been conducted over the last 2 decades, at least 6 additional studies that address different aspects of NCB doctrine, education, training, and certification are ongoing.

1. Air Force Inspector General – CBRNE CERFP Program Audit

“The AFAA [Air Force Audit Agency] is assessing whether Air National Guard officials properly managed the Chemical, Biological, Radiological, Nuclear, or high yield Explosive (CBRNE) Enhanced Response Force Package (CERFP) program. Specifically, auditors will determine whether CERFP program personnel requirements are valid, required training is accomplished, and sufficient supplies and equipment are identified and funded.”¹⁷

2. Defense Medical Readiness and Training Institute

This study updates the 2002 and 2003 studies, discussed in Section A.3 of this chapter, conducted by DMRTI to assess the commonalities and gaps in the military medical NCB education and training sector.

3. Defense Science Board – Nuclear Deterrence Skills

In October 2006, a Defense Science Board study was convened to “assess all aspects of nuclear deterrent skills (military, federal, and contractors),” to include “recommended methods and strategies to maintain a right-sized, properly trained and experienced work force to ensure the viability of the U.S. nuclear deterrent through 2020.”¹⁸ While this study will focus on deterrence rather than passive defense, it will incorporate passive defense measures related to safety, security, and crew training as well.

4. Defense Threat Reduction Agency – Defense Threat Reduction University

The Defense Threat Reduction Agency (DTRA) has initiated an effort to create a Defense Threat Reduction University (DTRU). DTRU’s vision is to be a “premier national capability to integrate U.S. Government, state, and local chemical, biological, radiological, nuclear, and high yield explosives (CBRNE) training and educational capabilities to build a trained and educated professional force to deny, reduce, destroy, respond to, and mitigate the effects of CBRNE proliferation and use, and to support the

¹⁷ Inspector General, United States Department of Defense. *Semi-Annual Report to the Congress*. Arlington, VA: 1 October 2006 – 31 March 2007, p. 26.

¹⁸ Undersecretary of Defense (Acquisition, Technology, and Logistics). Terms of Reference – Defense Science Board (DSB) Task Force on Nuclear Deterrence Skills. *Memorandum for Chairman, Defense Science Board*. Washington DC: 16 October 2006.

Combating weapons of mass destruction (WMD) mission.”¹⁹ A blue ribbon panel study, conducted with Science Applications International Corporation, was initiated to investigate the current status of NCB education and training efforts across the Services and to determine how the Defense Nuclear Weapons School fits into the overall NCB education and training arena, additional roles and requirements for NCB homeland security training, and alternative institutional arrangements, among other topics.²⁰

Utilizing this and other efforts, DTRA began investigating how best to facilitate the establishment of DTRU. This project is internal to DTRA but has been briefed to and coordinated with external organizations. The DTRU is envisioned as a collaborative international asset that will coordinate delivery and certify and train personnel across all functional elements of the Combating WMD mission area. DTRU uses the word “collaborative” specifically to indicate that the University will be built along a true university model with individual colleges. DTRA does not envision expanding current training and education capabilities into all Combating WMD mission areas; rather, the DTRU would rely on collaborating with existing centers of expertise. For example, the DTRU plans to collaborate and partner with a wide variety of multi-national, federal, and state organizations to build a full range of CBRNE education and training.

5. Joint Requirements Office – Combating Weapons of Mass Destruction Capabilities-Based Assessments

In addition to the Passive Defense CBA mentioned above, the JRO is completing a CBA for each Combating WMD military mission area. Three of these CBAs are already complete, including passive defense, interdiction, and elimination. A CBA for one other Combating WMD military mission area, consequence management, as well as CBAs for other mission areas, including homeland defense/civil support and integrated unit, base, and installation protection are in progress.

¹⁹ Defense Threat Reduction Agency. Defense Threat Reduction University. *Pamphlet*. Kirkland Air Force Base, NM: 2 July 2007;

Defense Threat Reduction Agency. *Defense Threat Reduction University – FY09 – FY14 Strategic Plan*. Kirkland Air Force Base, NM: 2 July 2007.

²⁰ Science Application International Corporation. *Report of the Independent Assessment Panel of the Defense Threat Reduction Agency (DTRA) Defense Nuclear Weapons School (DNWS)*. Draft. McLean, VA: 9 May 2007 (For Official Use Only (FOUO)).

6. National Defense University – Joint Professional Military Education

The proposed study will “assess the current status of combating WMD within the Joint Professional Military Education (JPME) system, focusing primarily on the senior officer schools...Using this assessment, the WMD Center will identify weaknesses and gaps in JPME for combating WMD and will identify existing programs and activities that could serve as models.”²¹

²¹ Center for the Study of Weapons of Mass Destruction, National Defense University. Request for Support from Office of the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs for the National Defense University Center for the Study of Weapons of Mass Destruction. *Draft Statement of Work*. Washington DC: 7 December 2006.

III. DEFINITIONS

Precise definitions are useful in explaining the focus of the nuclear, chemical, and biological (NCB) education and training study and in identifying gaps and recommendations. This chapter defines both the terms necessary to understand the House Report language for the purposes of this report and those additional terms necessary to describe current doctrine, education, training, and exercise activities and certification across the Services and Joint community.

A. CERTIFICATION

Certification comprises the methods and processes used by the Services and subordinate commands for education and training that validate Service members' competency to operate in an NCB environment. Certification may include but is not limited to class completion, examination, practical skill evaluation, exercise, board certification, and may be the result of a single or combination of methods. The method of certification should be applicable to the type of training conducted; for example, classroom knowledge might be certified by examination, whereas practical skill training should be certified by demonstration. Depending on the training being certified, certification may only be required once or may require renewing at some interval as dictated by the Services or certifying authority.

Although we use a broader definition for the purposes of this study, we recognize that for certain career fields and military specialties, there are more formal certification processes, recognized at the state, national, and international levels. For examples, doctors have certifications that are maintained through the American Medical Association and their specialty organizations. Similarly, certain military members obtain certifications through the Occupational Safety and Health Administration (OSHA) the National Fire Academy, and the Environmental Protection Agency (EPA), among others.

B. DOCTRINE

Joint Publication (JP) 1-02, Department of Defense Dictionary of Military and Associated Terms, defines *doctrine* as the “fundamental principles by which the military

forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application.”²² This study examines both Joint and Service passive defense doctrine. By definition, the only Joint passive defense doctrine is contained in Joint publications. Services retain the legal prerogative to dictate and implement passive defense doctrine and the tactics, techniques and procedures (TTPs) as well as to publish multi-Service and Service-specific manuals dictating the same.

1. Doctrinal alignment

Doctrinal alignment is defined, for this study, as the extent to which each Service’s training and education requirements meet the intent of Service and Joint doctrine.

C. JOINT TRAINING

Joint training encompasses the Joint and Service schools and other institutional educational material and procedures, training tasks, and exercises that are implemented in a Joint context. For the purposes of this study, Joint training incorporates the education, exercises, and training, as conducted by the Services and within a Joint context, that relate to NCB passive defense. It is important to recognize that the Services, via the Service Secretaries, retain the U.S. Code Title X responsibility for education and training of military personnel within each branch,²³ and while this study may identify areas for collaboration, it does not intend to impede the Services’ role in education and training.

1. Education

JP 1-02 defines *military education* as “the systematic instruction of individuals in subjects that will enhance their knowledge of the science and art of war.”²⁴ Within this study, education is defined as classroom-based learning and related field training and exercises. It also includes curriculums previously taught in classrooms and now taught in virtual environments, including but not limited to distance learning and material imparted via Web- and CD-based programs.

²² Joint Chiefs of Staff, Department of Defense. *Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms*. Washington, DC: Government Printing Office, 12 April 2001, as amended through 22 March 2007, p. 166.

²³ *United States Code, Title 10, Subtitle B, Part I, Chapter 303, Section 3013; Chapter 503, Section 5013; and Chapter 803, Section 8013*. Washington, DC: 2 January 2006. <http://uscode.house.gov/>. (accessed 9 June 2007).

²⁴ Joint Chiefs of Staff. *JP 1-02*. Op. cit., p. 339.

2. Exercise

JP 1-02 defines an *exercise* as “a military maneuver or simulated wartime operation involving planning, preparation, and execution. It is carried out for the purpose of training and evaluation. It may be a multinational, Joint, or single-Service exercise, depending on participating organizations.”²⁵

3. Training

JP 1-02 defines *military training* as “the instruction of personnel which improves their capacity to perform specific military functions and tasks” and also as “the exercise of one or more military units conducted to enhance their combat readiness.”²⁶ For the purposes of this study, training is the learning, practice, and application of practical skills and may be conducted on a unit level, as well as an individual level, to improve overall unit combat readiness.

4. Types of Joint Training

Chairman of the Joint Chiefs of Staff Instruction 3500.1D, *Joint Training Policy and Guidance for the Armed Forces of the United States Military*, identifies three types of Joint training: individual, staff, and collective.²⁷

- Individual Joint Training: Training that prepares individuals to perform duties in joint organizations (e.g., specific staff positions or functions) or to operate uniquely joint systems.
- Staff Joint Training: Joint individual or collective training conducted by an organization’s or operational unit’s staff.
- Collective Joint Training: Instruction and applied exercises that prepare an organizational team to complete required tasks as a unit.

D. NUCLEAR, CHEMICAL, AND BIOLOGICAL DEFENSE

Several different acronyms are currently in use to describe NCB, including chemical, biological, radiological, and nuclear (CBRN); chemical, biological, radiological, nuclear, and (high yield) explosives (CBRNE); and nuclear, biological, and chemical (NBC). Often chemical (and) biological (CB) and even weapons of mass

²⁵ Ibid., p. 190.

²⁶ Ibid., p. 344.

²⁷ Chairman of the Joint Chiefs of Staff. *Instruction (CJCSI) 3500.1D, Joint Training Policy and Guidance for the Armed Forces of the United States Military*. 31 May 2007, p. C-2.

destruction (WMD) are used to refer to NCB as well. Because each of these teams is currently in use and was referred to in documents, interviews, and literature, the study team attempted to retain the phrasing used by the references. For the purposes of this document, however, these terms all refer to NCB. Although *Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms* suggests either NBC or CBRN, NCB was selected as the appropriate acronym for inclusion in this document, as it is the acronym used in the House Report language shown in Appendix A.

For the purposes of this study, *NCB defense* refers to and is limited to non-medical and medical passive defense.

E. PASSIVE DEFENSE

JP 1-02 defines passive defense as “measures taken to reduce the probability of and to minimize the effects of damage caused by hostile action without the intention of taking the initiative.”²⁸ The *National Military Strategy to Combat Weapons of Mass Destruction* defines non-medical and medical passive defense as measures “to minimize or negate the vulnerability and effects of CBRN threats employed against U.S. forces.”²⁹ Passive defense incorporates the abilities to: 1) continually obtain and update information about a NCB situation; 2) characterize NCB hazards to understand the current situation and potential future situations; 3) protect against NCB hazards; and 4) facilitate continued operations in a contaminated environment. These abilities translate into contamination avoidance, individual protection, collective protection, decontamination, and medical countermeasures.³⁰

Passive defense is one of the eight identified Combating WMD military mission areas. The other mission areas include offensive operations; elimination; interdiction; active defense; consequence management; security cooperation and partnership activities; and threat reduction cooperation.³¹ Although there are overlaps across all of the mission areas, for the purposes of this study, only doctrine, education and training related to passive defense missions, as identified below, will be discussed.

²⁸ Joint Chiefs of Staff. *JP 1-02*. Op. cit., p. 406.

²⁹ Chairman of the Joint Chiefs of Staff, Department of Defense. *National Military Strategy to Combat Weapons of Mass Destruction*. Washington, DC, 13 February 2006, p. 30.

³⁰ Chairman of the Joint Chiefs of Staff, Department of Defense. *National Military Strategy to Combat Weapons of Mass Destruction*. Working Draft. Washington, DC: 19 March 2005, p. 28.

³¹ Chairman of the Joint Chiefs of Staff. *National Military Strategy to Combat Weapons of Mass Destruction*, Op. cit.

F. REQUIREMENTS

JP 1-02 defines a *military requirement* as “an established need justifying the timely allocation of resources to achieve a capability to accomplish approved military objectives, missions, or tasks.”³² For the purposes of this study, requirements are the means by which the Services translate doctrine into necessary and achievable NCB passive defense capabilities, skills, and proficiencies. These requirements are documented by the Services in manuals, publications, TTPs, instructions, and other references.

G. SERVICE MEMBERS

Service members include all military personnel (soldiers, sailors, airmen, and Marines) serving in Active and Reserve components or National Guard units. All Service members receive common NCB passive defense training.

1. NCB Specialist (Non-Medical)

In each of the Services, some Service members receive special education and training focusing on NCB hazards. Among these NCB Specialists (non-medical) are the Army Chemical Corps (Officer Branch 74 and Enlisted Military Occupation Specialty (MOS) 74D), Marine Chemical, Biological, Radiological, and Nuclear Defense Specialists (MOS 5702 and 5711), and Air Force Readiness and Emergency Management Specialists, Bioenvironmental Engineers, Medical Laboratory Technicians, and Aircrew Life Support (Air Force Specialty Codes 3E9X1, 43EXX/3B0X1, 43TXX/4T0X1, and 1T1X1, respectively).³³

These specialists may receive education and training which includes, but is not limited to, equipment maintenance, education and training of other Service members, reconnaissance, hazard prediction, decontamination, and other skills necessary to support the NCB military mission areas.

It should be noted that the Navy has no specific NCB Specialists (non-medical). Instead, NCB preparedness is a collateral duty assigned to shipboard Damage Control Assistants, Damage Control rated enlisted with a secondary Navy Enlisted Code (NEC) certifying them as Navy Shipboard Chemical, Biological, and Radiological Operations and Training Specialists (NECs 4805 and 4811 awarded to Damage Control petty officers and senior enlisted respectively), Disaster Preparedness Operational Specialists (a

³² Joint Chiefs of Staff. *JP 1-02*. Op. cit., p. 342.

³³ About.com. U.S. Military. About, Inc. <http://usmilitary.about.com/od/> (accessed on 5 June 2007).

secondary NEC assigned to those who complete the associated Navy course) and others specially assigned in the Naval construction battalions, Naval Expeditionary Combatant Commands (NECCs), aviation squadrons, and additional units as necessary. Similarly, the other Services have non-Specialist individuals who receive training that allows them to fill billets and collateral duty assignments which require some level of familiarity with NCB preparedness.

2. NCB Specialist (Medical)

All medical personnel receive the same education and training to develop basic NCB passive defense capabilities as is imparted to every Service member. In addition to that training, a limited number of patient care providers receive specialized education and training focusing on preparing for, responding to, and treating NCB casualties; for the purposes of this report, this segment of the military medical patient care provider community will be referred to as *NCB Specialists (medical)*.

IV. STUDY METHODOLOGY

A. STUDY OBJECTIVE

The objective of this study is to determine whether, within their particular Services and job specialties, training for U.S. Service members (Active and Reserve components and National Guard) aligns with Joint and Service doctrine addressing all aspects of passive defense against the nuclear, chemical, and biological (NCB) threat. In particular, this study addresses questions in four areas:

1. What are the Joint and Service doctrines for chemical, biological, radiological, and nuclear (CBRN) education and training?
2. Do the Services' education and training objectives meet the requirements as set forth in the Joint and Service doctrines?
3. Are schools, classes, practicals, drills, and exercises employed by the Services to ensure that CBRN education and training requirements are met?
4. Does each Service assess Service member performance in CBRN environments under realistic conditions through tests, inspections, evaluations and exercises?

B. DATA COLLECTION

To accomplish the study objective, the study team conducted a literature review to identify the doctrine and requirements for NCB education and training, as well as the shortfalls in the topics that need to be addressed to conduct effective NCB defense. In addition, we conducted interviews and issued a data call to the Services and other organizations.

The literature review focused on Joint, multi-Service, and Service-specific publications and instructions that addressed NCB defense doctrine and requirements. Studies were collected from the Government Accountability Office (GAO), the Department of Defense (DoD) Inspector General, the Services, the Joint Requirements Office, Defense Medical Training Readiness Institute (DMRTI), and others. Wherever possible, information from ongoing studies, as noted in Chapter 2, was also included. It is noteworthy that a fairly limited number of studies focusing on NCB education and training were available. Appendix G includes a complete list of references used for this study.

The data call sought the assistance of the Services in obtaining information regarding the education and training (e.g., schools, classes, practicums, drills, and exercises) that Service members are required to acquire to ensure preparedness for operation in an NCB environment. It was anticipated that these requirements would vary by Service and by job specialty within each Service; thus, the Services were tasked with providing relevant information by job specialty or for the general soldier, sailor, airman, and Marine rather than for specialties requiring more advanced knowledge of NCB.

Further, the Services and other organizations with responsibility for NCB education and training were asked to provide information regarding tasks, exercises, and procedures for conducting training and for certifying that education and/or training has been provided. Both initial and recurring training were examined.

Information was provided in a variety of forms, including publications, documents, course curricula, military instructions, published strategies, and interviews. The level of detail and information provided varied by Service and by community.

C. INFORMATION ASSESSMENT

Utilizing the information collected and/or made available by the Services and other NCB organizations, data was analyzed for gaps as shown in Figure IV-1.

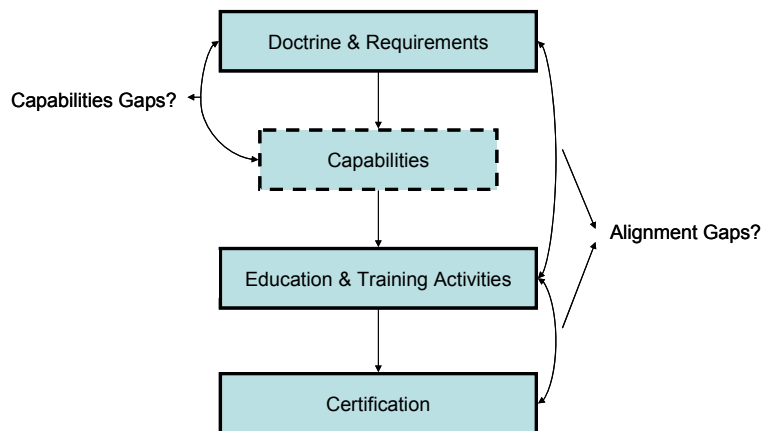


Figure IV-1. NCB Education and Training Areas for Gap Analysis

The first stage of information analysis was organizing the data—doctrine and requirements, education and training activities, and certification processes. The doctrine and requirements, whether Joint, multi-Service, or Service specific, identify a number of capabilities that individuals, specialists, commanders, and/or units must attain to be considered NCB proficient. Therefore, the next step was to evaluate the required

capabilities and determine if these capabilities were sufficient to facilitate the passive defense military mission area. In other words, would individuals and units with these capabilities be sufficiently prepared to conduct continued operations in an NCB hazard environment?

The education and training activities that help individuals, specialists, and units develop the necessary capabilities are dictated by the Services, as part of their Title X responsibility. These activities were assessed for gaps—areas where education and/or training were not considered sufficient to ensure successful completion of the passive defense military mission—as well as for alignment gaps. That is: 1) did training exist to develop the required capabilities; and 2) did all training and education support an existing requirement.

Finally, the methods and processes used for certifying successful attainment of the required capabilities and/or knowledge to facilitate continued operations in an NCB environment were evaluated. Gaps were identified here based on lack of certification and/or recertification requirements.

Many of the gaps and the corresponding recommendations were made by the study participants and interviewees themselves. Additional recommendations were made by the study team, a group comprised of individuals with experience in NCB and military research, education, training, and doctrine, and operations.

D. STUDY LIMITATIONS

During the conduct of the study, the study team noted a number of limitations or areas that might be examined further in order to obtain a clearer picture of NCB education and training requirements across all eight of the Combating Weapons of Mass Destruction (WMD) military mission areas. In particular, there are three limitations and assumptions that should be noted: limited time frame; study scope; and information availability.

1. Limited Time Frame

The study was conducted in a limited time frame, which impacted several aspects of the study, including the scope and the ways and amount of information collected.

2. Limitations of Scope

The study team's tasking focused on NCB passive defense doctrine, education, training, and certification. Therefore, the study does not include policy or policy-level

organizations; chemical, biological radiological, nuclear and (high yield) explosives (CBRNE) response organizations, or the regional or geographic Combatant Commands.

a. Policy and Policy-Level Organizations

In accordance with the legislative language, the study focused on Joint and Service doctrine, requirements, education and training activities, and certification. The study does not address policy or policy-level organizations except in the limited instance that the policy-level organization dictates Joint or Service doctrine and requirements.³⁴

b. CBRNE Response Organizations

The Weapons of Mass Destruction Civil Support Teams (WMD-CSTs), the National Guard's CBRNE Enhanced Response Force Packages (CERFPs), the Marine Corps' Chemical/Biological Incident Response Force (CBIRF), and the Army's 20th Support Command have direct responsibility for other Combating WMD military mission areas which may include one or more of the following: consequence management, elimination, and interdiction, rather than passive defense. To facilitate these missions, each team is trained, educated, and certified³⁵ in the passive defense skills and capabilities discussed throughout this study. Because their passive defense capabilities are developed in support of and to facilitate the completion of each group's specific Combating WMD military mission area, these groups are intentionally excluded from discussion here.

c. Regional and Geographic Combatant Commands

Because the House Report language focused on Joint and Service doctrine and on education, training, and certification processes, the geographic and functional Combatant Commands (i.e., Central, Southern, European, Pacific, African, Special Operations, and Transportation Commands) were not included within the scope of this study. Further

³⁴ The Assistant Secretary of Defense (Health Affairs), in a Memorandum dated 9 January 2004, Subject: "CBRNE Training for Military Medical Personnel," promulgated the Defense Medical Readiness Training Institute's *CBRNE Standards of Proficiency (SOPs) and Metrics* as the basis for training and education of all military medical personnel. These SOPs and metrics currently serve as the doctrine and requirements for military medical education and training.

³⁵ Currently, WMD-CSTs are the only CBRNE Response Organization for which formal unit and individual member certification processes exist and are mandated by public law. Members of the other mentioned units may be formally certified in accordance with Service, state, or federal requirements as necessary. Such certifications may be accomplished through the Occupational Safety and Health Administration (OSHA), the National Fire Academy, and the Environmental Protection Agency (EPA) among others.

assessment of the alignment of Combatant Commands' requirements and Joint and Service efforts would verify that the skills, capabilities, and proficiencies required in theater are among the current skills, capabilities, and proficiencies being developed among the Services for those deploying and help identify gaps, if they exist, in the alignment of doctrine, education, training and certification. This could identify if Combatant Commands have established additional Joint and Service-specific mission-essential task lists for units deploying to their operating areas.

3. Information Availability

Due to the limited study time frame, the study team was constrained to using the information that could be collected through literature reviews; documentation provided by the Services, the Joint Staff, the Combatant Commands, and other organizations; and interviews with Service subject-matter experts. All four Services, as well as Northern Command (NORTHCOM), Joint Forces Command (JFCOM), Strategic Command (STRATCOM), and other organizations, provided information in response to a data call put out via the Joint Staff Action Processing (JSAP) system; the information provided in response to the data call, however, varied both in level of detail and documentation.

The study's primary assumption requires reliance on the data provided by the Services and other organizations. Since site visits to verify course curricula, certification methods, and levels of individual and unit proficiency could not be accomplished, the authors assume that the information provided accurately represents the education and training activities being conducted, the certification processes being utilized, and the resulting level of readiness for both individuals and units.

Accurate, independent assessment of actual course curricula, certification processes, and levels of training and readiness would further complement the current study findings. For example, Joint and Service doctrine address NCB defense, but without detailed course information we could not determine whether equal emphasis and preparation had been placed on each area in education, training, or exercises. A more thorough examination of course curricula could potentially have allowed for confirmation of the current findings or identification of additional training and education gaps. Review of such information (e.g., course content) is vital to determining if the requirements are being met through the available education and training courses and if the certification processes are being employed effectively.

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V. NCB DOCTRINE AND SERVICE REQUIREMENTS

Strategic guidance forms the foundation for the development of Joint, multi-Service, and Service-specific doctrine that drives individual and collective training. This guidance also serves as the underpinning for and Universal Joint Task Lists (UJTLs) and Service task lists that feed the development of Joint and Service Mission Essential Tasks Lists (METLs). The Department of Defense (DoD) has the responsibility to execute national military strategy. Highlights of the DoD-specific role from several of the associated national strategy documents are summarized below:

- *National Security Strategy of the United States of America (September 2002)*: “We must deter and defend against the threat before it is unleashed. We must ensure that key capabilities—detection, active and passive defenses, and counterforce capabilities—are integrated into our defense transformation and our homeland security systems.”³⁶
- *National Defense Strategy of the United States of America (March 2005)*: “We will give top priority to dissuading, deterring, and defeating those who seek to harm the United States directly, especially extremist enemies with Weapons of Mass Destruction [WMD].”³⁷
- *National Strategy to Combat Weapons of Mass Destruction (December 2002)*: “The possession and increased likelihood of use of WMD by hostile states and terrorists are realities of the contemporary security environment. It is therefore critical that the U.S. Military and appropriate civilian agencies be prepared to deter and defend against the full range of possible WMD employment scenarios. We will ensure that all needed capabilities to combat WMD are fully integrated into the emerging defense transformation plan and into our homeland security posture.”³⁸
- *National Military Strategy to Combat Weapons of Mass Destruction (February 2006)*: “The combatant commands, military departments, and combat support agencies are the means to accomplish MSOs [military strategic objectives].

³⁶ The White House. *National Security Strategy of the United States of America*. Washington, DC: September 2002, p. 14.

³⁷ Department of Defense. *National Defense Strategy of the United States of America*. Washington, DC: March 2005, p. iv.

³⁸ The White House. *National Strategy to Combat Weapons of Mass Destruction*. Washington, DC: December 2002, p. 2.

Commander, U.S. Strategic Command (CDRUSSTRATCOM) is the lead combatant commander for integrating and synchronizing of defense in combating WMD. Consistent with this assignment, USSTRATCOM will integrate and synchronize applicable DoD-wide efforts across the doctrine, organization, training, material, leadership, personnel, and facilities spectrum. Combatant Commanders will continue to execute combating WMD missions within their AORs [areas of responsibility],”³⁹ while military departments develop doctrine and organize, train, and equip their forces to combat WMD unless otherwise directed.

- *National Military Strategic Plan for the War on Terrorism (February 2006)*: “Military activities include efforts to: detect and monitor acquisition and development; conduct counter-proliferation operations, security cooperation activities, WMD active and passive defense, and coordination of consequence management operations (logistics, health service support, and decontamination activities).”⁴⁰

A. NCB DEFENSE DOCTRINE

Nuclear, chemical, and biological (NCB) doctrine is Joint, multi-Service, or Service specific. The Joint Requirements Office for Chemical, Biological, Radiological and Nuclear Defense (JRO-CBRND) J-8 is the lead for the development of Joint doctrine and multi-Service tactics, techniques, and procedures (TTPs). While each Service has its individual NCB defense doctrine, that doctrine is provided to the JRO-CBRND as input to support or be integrated into the multi-Service doctrine and TTPs manuals. The Services then approve the multi-Service doctrine and TTPs through the JRO-CBRND. Table V-1 provides a list of applicable publications. (Note: The tables in this chapter use numerous acronyms,, which are defined in the text preceding each table or group of tables to which they apply.)

³⁹ Chairman of the Joint Chiefs of Staff, *National Military Strategy to Combat Weapons of Mass Destruction*. Washington, DC: 13 February 2006, p. 6.

⁴⁰ Chairman of the Joint Chiefs of Staff, *National Military Strategy for the War on Terrorism*. Washington, DC: 1 February 2006, p. 7.

Acronyms Defined for Table V-1

AFDD	Air Force Doctrine Document	MCRP	Marine Corps Reference Publication
AFI	Air Force Instruction	MCWP	Marine Corps Warfighting Publication
AFJMAN	Air Force Joint Manual	MTTP	Multi-Service Tactics, Techniques, and Procedures
AFMAN	Air Force Manual	NATOPS	Naval Air Training and Operating Procedures Standardization
AFPD	Air Force Policy Document	NAVAIR	Naval Air
AFTTP	Air Force Tactics, Techniques, and Procedures	NAVMED	Naval Medicine
BW/CW	Biological Warfare/Chemical Warfare	NCB	Nuclear, Biological, and Chemical
CBRN	Chemical, Biological, Radiological, and Nuclear	NATO	North Atlantic Treaty Organization
CNIINST	Chief of Naval Installations Instruction	NTRP	Naval Tactical Reference Publication
EM	Emergency Management	NTTP	Naval Tactics, Techniques, and Procedures
FM	Field Manual	NWP	Naval Warfare Publication
FMFM	Fleet Marine Field Manual	SSE	Sensitive Site Exploration
MAGTF	Marine Air Ground Task Force	TM	Technical Manual

Table V-1. Core NCB Defense Doctrine

Publication	Type and Status	Army	Navy	Air Force	Marine Corps
Joint Publication 3-11, Joint Doctrine for Operations in Nuclear, Biological, and Chemical Environments, July 2000	Joint Doctrine				
Joint Publication 3-26, Joint Doctrine for Homeland Security, August 2005	Joint Doctrine				
Joint Publication 4-02, Doctrine for Health Service Support, October 2006	Joint Doctrine				
Joint Publication 3-40, Joint Doctrine for Combating Weapons of Mass Destruction, July 2004	Joint Doctrine				
Joint Publication 3-41, CBRNE Consequence Management, October 2006	Joint Doctrine				
Multi-Service Tactics, Techniques, and Procedures (MTTP) for Nuclear, Biological, and Chemical (NBC) Defense Operations	Multi-Service Doctrine	FM 3-11	NWP 3-11	AFTTP (I) 3-2.42	MCWP 3-37.1
MTTP for NBC Defense of Theater fixed Sites, Ports, and Airfields, September 2000	Multi-Service Doctrine (under revision)	FM 3-11.34	NTTP 3-11.23	AFTTP (I) 3-2.33	MCWP 3-37.5
MTTP for CBRN Contamination Avoidance, February 2006	Multi-Service Doctrine	FM 3-11.3	NTTP 3-11.25	AFTTP 3-2.56	MCRP 3-37.2A
Nuclear Contamination Avoidance	Multi-Service Doctrine (FM 3-11.3 under revision)	Part of FM 3-11.3	Part of NTTP 3-11.25	Part of AFTTP 3-2.56	MCRP 3-37.2B
MTTP for NBC Aspects of Consequence Management, December 2001	Multi-Service Doctrine (under revision)	FM3-11.21	NTTP 3-11.24	AFTTP (I) 3-2.37	MCRP 3-37.2C
MTTP for CBRN Decontamination, April 2006	Multi-Service Doctrine	FM 3-11.5	NWP 3-11.26	AFTTP (I) 3-2.60	MCWP 3-37.3
MTTP for NBC Protection, June 2003	Multi-Service Doctrine	FM 3-11.4	NWP 3-11.27	AFTTP (I) 3-2.46	MCWP 3-37.2
Field Behavior of NBC Agents (including smoke and incendiaries), November 1986	Multi-Service Doctrine	FM 3-6		AFMAN 105.7	MCRP 3-37B
Potential Military Chemical/Biological Agents and Compounds, January 2005	Multi-Service Doctrine	FM 3-11.9	NTTP 3-11.32	AFTTP (I) 3-22.55	MCRP 3-37.1B
Flame, Riot Control Agent, and Herbicide Operations, August 1996 w/ch1 March 2003	Multi-Service Doctrine	FM 3-11.11			MCWP 3-37.2
MTTP for NBC Vulnerability Assessment, December 2004	Multi-Service Doctrine	FM 3-11.14	NTTP 3-11.28	AFTTP (I) 3-22.54	MCRP 3-37.1A
MTTP for NBC Reconnaissance	Multi-Service Doctrine	FM 3-11.19	NTTP 3-11.29	AFTTP (I) 3-22.44	MCWP 3-37.4
MTTP for Biological Surveillance, October 2004	Multi-Service Doctrine	FM 3-11.86	NTTP 3-11.31	AFTTP (I) 3-22.52	MCWP 3-37.1C
NBC Field Handbook	Army Doctrine	FM 3-7			
Weapons of Mass Destruction Civil Support Team Tactics, Techniques, and Procedures, June 2003	Army Doctrine	FM 3-11.22			
CBRN Responder Operations Handbook	Army Doctrine (New Pub)	FM 3-11.23			
CBRN Handbook: Sensitive Site Exploitation (SSE) and Environmental Recon Operations	Army Doctrine (New Pub)	FM 3-11.24			

Publication	Type and Status	Army	Navy	Air Force	Marine Corps
Force Health Protection in CBRN Environment, October 2000	Multi-Service Doctrine (under revision)	FM 4-02.7 (FM8-10-7)	NTTP 4-2.7 (Draft)	AFTTP 3-42.3 AFTTP 3-47.3	MCRP 4-02.1E
Treatment of Nuclear and Radiological Casualties, December 2001	Multi-Service Doctrine	FM 4-02.283	NTRP 4-02.21	AFMAN (I) 44-161	MCRP 4-11.1B
Treatment of Biological Warfare Agent Casualties July 2000	Multi-Service Doctrine	FM8-284	NTRP 4-02.23	AFMAN (I) 44-156	MCRP 4-11.1C
Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries, December 1995	Multi-Service Doctrine (under revision)	FM 8-285	NAVMED R5041	AFJMAN 44-149	FMFM 11-11
North Atlantic Treaty Organization (NATO) Handbook on the Medical Aspects of NBC Defensive Operations, February 1996	Multi-Service Doctrine	FM 8-9	NAVMED R5059	AFJMAN 44-151	
MTTP for Recovery Operations in a Chemical, Biological, Radiological, and Nuclear Environment	Navy/ Marine Corps Dual Designated Doctrine		NTTP 3-02.1.1		MCWP 3-37.6
Chemical and Biological Defense Naval Air Training and Operating Procedures Standardization (NATOPS)	Navy/ Marine Corps Doctrine		NAVAIR 00-80T-121		
Surface Ship Survivability	Navy Doctrine		NTTP 3-20.31		
Chapter 470 Shipboard Biological Warfare/Chemical Warfare (BW/CW) Defense and Countermeasures	Navy Doctrine (under revision)		NTRP 3-20.31.470		
Guide to Biological Warfare Defense and Bioterrorism – Afloat and Ashore	Navy Doctrine		TM 3-11.1.02		
Naval Installation Emergency Management (EM) Program Manual	Navy Guidance		CNIINST 3440.17		
Marine Air Ground Task Force (MAGTF) NBC Defense Operations	Marine Corps Doctrine				MCWP 3-37
Counter-Chemical, Biological, Radiological, Nuclear, and High-Yield Explosive Operations	Air Force Doctrine			AFDD 2-1.8	
Emergency Management	Air Force Policy			AFPD 10-25	
Air Force Emergency Management Program, Planning and Operations	Air Force Guidance			AFI 10-2501	
Air Force Emergency Management Program Standard Operating Procedures	Air Force Guidance			AFMAN 10-2502 Volume 1	
Major Accident and Natural Disaster Standard Operating Procedures	Air Force Guidance (draft develop)			AFMAN 10-2502 Volume 2	
Enemy Attack and Terrorist use of CBRNE Materials Standard Operating Procedures	Air Force Guidance (draft develop)			AFMAN 10-2502 volume 3	
Nuclear, Biological, Chemical Defense Operations and Standards	Air Force Guidance			AFMAN 10-2602*	
Emergency Health Powers on Air Force Installations	Air Force Guidance			AFI 10-2603	
Disease Containment Planning Guidance	Air Force Guidance			AFI 10-2604	
Airman's Manual	Air Force Guidance			AFMAN 10-100	

* AFMAN 10-2602 will be rescinded when AFMAN 10-2502 Volumes 1—3 are published.

The Universal Joint Task Lists (UJTLLs) assist in the formulation of policies for Joint training of the Armed Services. The UJTLLs serve as a common language and common reference system for Joint force commanders, combat support agencies, operational planners, combat developers, and trainers to communicate mission requirements. It is the basic language for development of a Joint mission-essential task list (JMETL) or agency mission-essential task list that identifies required capabilities for mission success. When augmented with the Service task lists, it is a comprehensive integrated menu of functional tasks, conditions, measures, and criteria supporting all levels of the DoD in executing the national military strategies. Each of the Services has its own Universal Task List, derived from the UJTLL.

In addition to designating JMETL tasks, combatant commanders and the Services are also responsible for including NCB considerations in force development, training, and leader development activities. The principles for operations in NCB environments and realistic consideration of NCB weapons effects on sustained combat operations should be incorporated into training, exercises, and professional military education and leader development programs. *Joint Publication (JP) 3-11, Joint Doctrine for Operations in Nuclear, Biological, and Chemical (NBC) Environments*, provides military guidance for use by the Armed Forces in preparing the appropriate training management plans and programs. Both Title X of the United States Code and *JP 3-11* state that individual training and exercises to test proficiency remain under the purview of the Services. In addition, Services are responsible for including NCB in their overall training management plan. NCB defense must be integrated into individual and collective training programs.⁴¹

Standards of proficiency for NCB defense have been approved and codified in *Field Manual (FM) 3-11 (FM 3-100)/Marine Corps Warfighting Publication (MCWP) 3-37.1/Naval Warfare Publication (NWP) 3-11/Air Force Tactics, Techniques and Procedures (AFTTP) (I) 3-2.42 – Multi-Service TTPs [Tactics, Techniques, and Procedures] for NBC Defense Operations (FM 3-11)*, dated March 2003. All the Services use this document as the foundation for their NCB defense training. Tables V-2 through V-7 list the *FM 3-11* NCB standards of proficiency for every Service member.

⁴¹ Joint Chiefs of Staff, Department of Defense. *Joint Publication 3-11 – Joint Doctrine for Operations in Nuclear, Biological, and Chemical (NBC) Environments*. Washington DC: 11 July 2000, p. II-1.

Acronyms Defined for Tables V-2 through V-13

3E9	Air Force Specialty – Readiness, Emergency (Consequence) Management	NBC	Nuclear, Biological, and Chemical
CB	Chemical and Biological	NBC-D	Nuclear, Biological, and Chemical Defense
CBRNE	Chemical, Biological, Radiological, and Nuclear	NBCDE	Nuclear, Biological and Chemical Defense Equipment
CCA	Contamination Control Area	NBCWRS	NCB Warning and Reporting System
AFTTP	Air Force Tactics, Techniques, and Procedures	NCO	Noncommissioned Officer
BW/CW	Biological Warfare/Chemical Warfare	ROTA	Release Other Than Attack
CBRN	Chemical, Biological, Radiological, and Nuclear	SEDC	Senior Enlisted Damage Control
CP	Collective Protection	SOP	Standard Operating Procedure
DCA	Damage Control Assistant	TIM	Toxic Industrial Material
IPE	Individual Protective Equipment	NTTP	Naval Tactics, Techniques, and Procedures
LLR	Low-Level Radiation	TTPs	Tactics, Techniques, and Procedures

Table V-2. Individual Standards of Proficiency

Non-CBRN Personnel	Army	Navy	Air Force	Marine Corps
Individual Protection				
Individuals should normally receive initial NBC-D training upon entering military service and receive refresher training at regular intervals thereafter.	X	X	X	X
Individual Survival Standards				
Recognize attacks with NBC munitions and take protective action.	X	X	X	X
Recognize NBC alarms and signals.	X	X	X	X
Recognize the existence of CBRN hazards and take protective action.	X	X	X	X
Properly don, seat, clear, and check the respirator/protective mask.	X	X	X	X
Properly don protective clothing. The individual must be able to relate the use of protective clothing to the graduated levels of the NBC threat.	X	X	X	X
Take protective measures against thermal radiation (light, flash, and heat), a blast wave, and radiation effects of nuclear explosions.	X	X	X	X
Carry out immediate individual decontamination.	X	X	X	X
Follow the procedures for the removal of NBC individual protective equipment.	X	X	X	X
Recognize if casualties are contaminated and perform first aid (self- & buddy-aid).	X	X	X	X
Practice good personal health and hygiene as a protective measure against the spread of disease.	X	X	X	X

Source: The standards of proficiency are drawn from the Multi-Service Publication. *FM 3-11/MCWP 3-37.1/NWP 3-11/AFTTP(I) 3-2.42, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical Defense Operations (FM 3-11)*. Fort Leonard Wood, MO: 10 March 2003.

The sources of Service requirements are drawn from Service documents and the following subject matter experts:

Army - Chief Training Developer and Instructional Design Specialists, Directorate of Training and Training Development, United States Army Chemical School (USAMCLS), Ft Leonard Wood, MO.

Navy: Field Training Requirements Program Managers (N52), Center for Naval Engineering, Fort Leonard Wood, MO; and Naval Surface Warfare Center, Combat Development Systems Analysis, Damneck, VA.

Air Force: Superintendent, Readiness Training, USAF 366th Training Detachment Squadron/Detachment 7, Fort Leonard Wood, MO.

Marine Corps: Director and Chief Instructor, US Marine Corps Chemical, Biological, Radiological, and Nuclear (CBRN) Defense School, Fort Leonard Wood, MO.

Table V-3. Individual Basic Operating Standards of Proficiency

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Maintain NBC individual protective equipment (IPE) in a high state of serviceability at all times.	X	X	X	X
Be proficient in taking specific actions required for maintaining operating efficiency before, during, and after NBC attacks in order to reduce the effects of NBC weapons.	X	X	X	X
Recognize or detect NBC agent contamination and perform immediate decontamination of self, clothing, personal equipment, individual weapon, vehicle, and crew-served weapon.	X	X (decon of self, clothing, equipment, spaces, etc)	X	X
Recognize all standard marking signs that indicate chemical, biological, or radiological contaminated areas.	X	X	X	X
Cross or bypass marked NBC contaminated areas with minimum danger to self.	X	Not taught (may not be considered applicable for many Naval applications)	X	X
Demonstrate proficiency in performing primary military duty—to include the use of crew/personal weapon(s)—while in the individual protective equipment for extended periods.	X	As applicable (may not be considered applicable for collectively protected environments)	X	X
Be familiar with the procedures to be followed at the decontamination facilities of military service.	X	X	X	X
Be familiar with the principles of Collective Protection (CP), including entry and exit from CCAs and shelter organization and operation where applicable.	X	X	X	X
Demonstrate familiarity with the use of dosimetry devices and CB detection and monitoring equipment where applicable.	X	X (provided to those with advanced damage control or other specialty training)	X (no general dosimetry training)	X
Demonstrate the ability to perform the duties of an NBC observer.	X	X (limited training to SeaBees and others specially trained)	X	X

* The Surface Force Training Manual requires the noted skills to be demonstrated as part of a pre-deployment work-up cycle for shipboard personnel. Additional Naval documents require that the Naval construction battalions (SeaBees), Naval expeditionary combat commands (NECCs), aviation squadrons, and other units demonstrate these capabilities as the threat is identified.

Table V-4. Basic Standards of Proficiency for Selected Personnel Requiring Additional Training

Non-CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Personnel trained in NBC monitoring, survey, and reconnaissance				
Operate and maintain NBC equipment applicable to the task.	X	X	X	X
Recognize attacks with NBC munitions and fully understand unit procedures for implementing warnings and providing protection.	X	X	X	X
Detect and identify contamination and organize and conduct NBC monitoring and survey operations.	X	X	X	X
Monitor personnel, food, drinking water, and equipment for NBC contamination and effectiveness of decontamination measures.	X	X	X	X
Collect samples of suspected biological contamination and forward them as directed.	X	X (bio. only)	X	X
Collect samples of liquid or solid chemical agents.	X		X	X
Mark NBC contaminated areas, equipment, supplies, and stores with standard marking signs.	X	X	X	X
Provide data for compilation of NBC reports.	X	X (DCA/SEDC)	X	X
Organize and conduct NBC monitoring and surveying operations.	X	X	X	X
Operate detection and survey equipment for recognizing and detecting hazards from CBRN releases.	X	X	X	X
Personnel trained in contamination control				
Perform necessary decontamination of supplies, equipment, and areas for which they are responsible in the performance of their primary duties.	X	X	X	X
Operate and maintain assigned decontamination equipment.	X	X	X	X
Establish and operate a personnel decontamination station where applicable.	X	X	X	X
Take measures before an attack to prevent contamination and after an attack to avoid the spread of contamination.	X	X	X	X
Officers and NCOs				
Deployment of NBC observers and detection devices.	X	X	As required	X
NBC monitoring, survey, and reconnaissance.	X	X	As required	X
Survival procedures before, during, and after an NBC attack or <i>friendly</i> nuclear strike.	X	X	As required	X
CBRN downwind hazards.	X	X	As required	X
Radiation dose control, exposure rules, and record keeping.	X	X	As required	X
General protective values of material against radiation, including the selection of buildings and the construction of shelters.	X	X	As required	X
Contamination control procedures for the permanent or temporary prevention, reduction, or neutralization of contamination for maintaining or strengthening an efficient conduct of operations.	X	X	As required	X

* The Navy identifies shipboard specially trained individuals as those shipboard personnel who have attended Repair Locker Leader School (for E-5s and above) and/or completed Advanced Damage Control personnel qualifications. Officers and NCOs are considered to be those who have completed the Damage Control Assistant/Senior Enlisted Damage Control (DCA/SEDC) course. Additional billets and individuals are identified to receive this training for the SeaBees, NECCs, aviation squadrons, and other units as required.

** Air Force bases proficiencies requirements on rank, position and/or assigned/deployed location.

Table V-5. Basic Standards of Proficiency for NBC-D

Non-CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Command NBC-D officers and enlisted personnel in cooperation with the functional groups of the staff				
Assist the commander in providing policy and guidance to lower echelons in all matters pertaining to the development of an NBC-D capability.	X	X	3E9-series personnel only	X
Plan, conduct, and monitor NBC-D training within the command.	X	X	3E9-series personnel only	X
Evaluate the capability of lower echelons to survive an NBC attack and to continue operations in an NBC environment.	X	X	3E9-series personnel only	X
Keep abreast of new TTP in NBC defense.	X	Not taught	3E9-series personnel only	X
Act in the capacity of an advisor to the commander on all matters pertaining to the NBC-D of subordinate units/formations. When augmented, be responsible for the NBCWRS.	X	X	3E9-series personnel only	X
Recommend employment of special NBC-D elements/units, if available.	X	X	3E9-series personnel only	X
Operate and use automated systems for calculations and data processing where appropriate. If an automated system is not available, personnel in NBC centers must be able to perform the same tasks manually.	X	X	3E9-series personnel only	X
Act as an advisor to the commander on all matters pertaining to cooperation in NBC-D with units/agencies of other nations.	X	X	3E9-series personnel only	X
Unit NBC-D officers and enlisted personnel (assisted by enlisted alternates)				
Provide technical assistance to the commanders and staff on NBC-D training and operations.	X	X	3E9-series personnel only	X
Coordinate the unit's NBC-D activities.	X	X	3E9-series personnel only	X
Provide NBC-D training to achieve basic operating standards of proficiency for the unit, the individuals of the unit.	X	X	3E9-series personnel only	X
Plan and supervise NBC-D training aspects of operational training exercises and maneuvers.	X	X	3E9-series personnel only	X
Supervise preparation of unit NBC-D SOPs and adapt them to existing plans of other units as required.	X	X	3E9-series personnel only	X
Supervise operations and maintenance of NBC material.	X	X	3E9-series personnel only	X
Determine by dosimetry or by calculation (as appropriate) the total dose and time of stay in and/or transit through radiological contaminated areas to avoid exceeding command exposure guidance.	X	X	3E9-series personnel only (no dosimetry training. Dosimetry is taught by Bio-environmental Career Field)	X
Prepare fallout prediction patterns and perform the tasks of the NBCWRS (may be assigned to meteorological, operational, and/or navigational officers).	X	X	3E9-series personnel only	X
Plan NBC reconnaissance and advise commanders on the best routes to cross or bypass an NBC contaminated area.	X	X	3E9-series personnel only	X
Plan and coordinate decontamination within the unit and advise the commander.	X	X	3E9-series personnel only	X
Maintain records of the unit's radiation exposure.	X	X	3E9-series personnel only	X

Non-CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Estimate downwind hazard for chemical attacks.	X	X	3E9-series personnel only	X
Report NBC data to next higher Headquarters and perform the NBC reporting and warning tasks.	X	X	3E9-series personnel only	X
Evaluate individual and unit competence in NBC-D and advise the commander on the unit's ability to survive and to continue operations in an NBC environment.	X	X	3E9-series personnel only	X
Operate and use data processing devices and possess basic knowledge of the structure of programs used in NBC warning and reporting where appropriate.	X	Not applicable	3E9-series personnel only	X
Additionally, all NBC-D officers/NCOs				
Identify the hazards related to risks of Low Level Radiation (LLR), release other than attack (ROTA), and Toxic Industrial Materials (TIM).	X	Not taught	3E9-series personnel only	X
Make contingency plans for units facing LLR, ROTA, and TIM hazards.	X	Not taught	3E9-series personnel only	X
Act as an advisor to the commander on all matters pertaining to LLR, ROTA, and TIM hazards.	X	Not taught	3E9-series personnel only	X

* The Navy identifies Shipboard Command NBC-D officers and enlisted as those who have attained a Shipboard CBR-D Naval enlisted classification (NEC 4805, E-5 and above) or completed the Disaster Preparedness Operations Specialist course or the Damage Control Assistant (O-1 and above)/Senior Enlisted Damage Control (DCA/SEDC) course (which awards a senior enlisted NEC of 4811). Additional billets and individuals are identified to receive this training and fulfill these roles for the SeaBees, NECCs, aviation squadrons, and other units as required.

** Air Force requires these capabilities be developed and maintained by NCB Specialists only.

Table V-6. Basic Standards of Proficiency for Commanders

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Understand the principles of NBC-D.	X	X	Wing/Installation commanders only	X
Know the defense organization and the NBCDE available.	X	X	Wing/Installation commanders only	X
Assess the capabilities of the NBC-D forces under their command.	X	X	Wing/Installation commanders only	X
Assess the effects of NBC munitions on unit/formation, especially on operations to be conducted.	X	X	Wing/Installation commanders only	X
Issue orders and take measures depending on situation and mission.	X	X	Wing/Installation commanders only	X
Plan operations taking into account the NBC threat and the readiness of units for operations in an NBC environment.	X	X	Wing/Installation commanders only	X
Estimate the effects of wearing NBC IPE for an extended period of time and understand what measures can be taken to mitigate those effects on the combat effectiveness and well being of their forces.	X		Wing/Installation commanders only	X
Be familiar with the available medical prophylactic countermeasures.	X	X	Wing/Installation commanders only	X
Be familiar with integration of NBC training in exercises.	X	X (DCA/SEDC)	Wing/Installation commanders only	X

* The Navy provides this training for all shipboard officers as part of their Surface Warfare Officer personnel qualification. Additional billets and individuals are identified to receive this training and fulfill these roles for the SeaBees, NECCs, aviation squadrons, and other units as required.

Table V-7. Survival and Unit Basic Operating Standards

Non-CBRN Personnel	Army	Navy	Air Force	Marine Corps
Take immediate and correct action upon warning of an imminent NBC attack or arrival of a CB agent or radiological fallout.	X	X	X	X
Determine the presence and nature of NBC hazards in the unit's area and take effective measures to mitigate, to the extent possible, the effects of an NBC attack.	X	X	X	X
Properly use unit NBC protective equipment and supplies and maintain them in a high state of serviceability and readiness.	X	X	X	X
Enforce a high order of health, hygiene, and sanitation to minimize the spread of disease following a biological attack.	X	X	X	X
Maintain a degree of protection appropriate to the risk while continuing to conduct the primary mission of the unit.	X	X	X	X
Perform necessary decon of supplies, equipment, and areas for which it is responsible in the performance of its primary duties.	X	X	X	X
Delineate the areas of an NBC hazard.	X	X	X	X
Delineate contaminated areas and mark them by using standard signs.	X	X	X	X
Cross, bypass, or function in contaminated areas with minimum loss of efficiency, decontaminating where necessary.	X	Not taught (may not be considered applicable for many Naval applications)	X	X
Operate efficiently over an extended period of time (to be determined by the commander based on such factors as weather conditions and equipment specifications) with personnel in full protective equipment to include wearing the protective mask.	X	As applicable (may not be considered applicable for collectively protected environments)	X	X
Report nuclear detonations, CB attacks, and associated hazards, hazard areas, ROTAs.	X	X	X	X
Assign NBC personnel based on standards of proficiency outlined in <i>FM 3-11</i> .	X	X	X	X

Tables V-8 through V-12 identify Standards of Proficiency required for military occupational specialties and functional areas that are identified as NCB specific.

The Navy does not have a dedicated career path in the NCB field; NCB defense is a collateral duty of the damage controlman (DC) rating. Navy personnel who receive formal school training are considered the subject matter experts in NCB but not NCB Specialists (non-medical); as such, their requirements and capabilities are noted in Tables V-2 through V-7, and no further Navy information is provided in Tables V-8 through V-12.

Table V-8 identifies the basic standards of proficiency that an NCB Specialist (non-medical) must attain. Each additional table adds standards of proficiency that

correspond to increasing responsibilities, increasing rate, or increasing supervisory roles as noted.

Officers and enlisted personnel whose primary duties are concerned with unit NCB defense activities are required to receive additional formal training. NCB Specialists (non-medical) or (Nuclear, biological, and chemical defense (NBCD) specialists) consist of command NBC-D officers and enlisted personnel, and unit NBC-D officers and enlisted personnel. Command NBC-D officers and enlisted personnel are those who are assigned full time duties for NBC-D. Unit NBC-D officers and enlisted personnel are those who are assigned an additional duty to form the NBC control party. These personnel can be at the same company level (or equivalent) but may be at a higher level, depending on a Service's organizational structure.

Table V-8. NCB Specialists (Non-medical) Individual Standards of Proficiency

CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Individual Protection				
Individuals should normally receive initial NBC-D training upon entering military service and receive refresher training at regular intervals thereafter.	X		X	X
Individual Survival Standards				
Recognize attacks with NBC munitions and take protective action.	X		X	X
Recognize NBC alarms and signals.	X		X	X
Recognize the existence of CBRN hazards and take protective action.	X		X	X
Properly don, seat, clear, and check the respirator/protective mask.	X		X	X
Properly don protective clothing. The individual must be able to relate the use of protective clothing to the graduated levels of the NBC threat.	X		X	X
Take protective measures against thermal radiation (light, flash, and heat), a blast wave, and radiation effects of nuclear explosions.	X		X	X
Carry out immediate individual decontamination.	X		X	X
Follow the procedures for the removal of NBC individual protective equipment.	X		X	X
Recognize if casualties are contaminated and perform first aid (self- & buddy-aid).	X		X	X
Practice good personal health and hygiene as a protective measure against the spread of disease.	X		X	X

Sources: *Army* - Chief Training Developer and Instructional Design Specialists, Directorate of Training and Training Development, United States Army Chemical School (USAMCLS), Ft Leonard Wood, MO.

Air Force: Superintendent, Readiness Training, USAF 366th Training Detachment Squadron/Detachment 7, Fort Leonard Wood, MO.

Marine Corps: Director and Chief Instructor, US Marine Corps Chemical, Biological, Radiological, and Nuclear (CBRN) Defense School, Fort Leonard Wood, MO.

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables V-2 through V-7.

Table V-9. NCB Specialists (Non-medical) Individual Basic Operating Standards of Proficiency

CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Maintain NBC individual protective equipment (IPE) in a high state of serviceability at all times.	X		X	X
Be proficient in taking specific actions required for maintaining operating efficiency before, during, and after NBC attacks in order to reduce the effects of NBC weapons.	X		X	X
Recognize or detect NBC agent contamination and perform immediate decontamination of self, clothing, personal equipment, individual weapon, vehicle, and crew-served weapon.	X		X	X
Recognize all standard marking signs that indicate chemical, biological, or radiological contaminated areas.	X		X	X
Cross or bypass marked NBC contaminated areas with minimum danger to self.	X		X	X
Demonstrate proficiency in performing primary military duty—to include the use of crew/personal weapon(s)—while in the individual protective equipment for extended periods.	X		X	X
Be familiar with the procedures to be followed at the decontamination facilities of military service.	X		X	X
Be familiar with the principles of Collective Protection (CP), including entry and exit from CCAs and shelter organization and operation where applicable.	X		X	X
Demonstrate familiarity with the use of dosimetry devices and CB detection and monitoring equipment where applicable.	X		X (no dosimetry training)	X
Demonstrate the ability to perform the duties of an NBC observer.	X		X	X

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables V-2 through V-7.

Table V-10. NCB Specialists (non-medical) Basic Standards of Proficiency for Selected Personnel Requiring Additional Training

CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Personnel trained in NBC monitoring, survey, and reconnaissance				
Operate and maintain NBC equipment applicable to the task.	X		X	X
Recognize attacks with NBC munitions and fully understand unit procedures for implementing warnings and providing protection.	X		X	X
Detect and identify contamination and organize and conduct NBC monitoring and survey operations.	X		X	X
Monitor personnel, food, drinking water, and equipment for NBC contamination and effectiveness of decontamination measures.	X		X	X
Collect samples of suspected biological contamination and forward them as directed.	X		X	X
Collect samples of liquid or solid chemical agents.	X		X	X
Mark NBC contaminated areas, equipment, supplies, and stores with standard marking signs.	X		X	X
Provide data for compilation of NBC reports.	X		X	X
Organize and conduct NBC monitoring and surveying operations.	X		X	X
Operate detection and survey equipment for recognizing and detecting hazards from CBRN releases.	X		X	X
Personnel trained in contamination control				
Perform necessary decontamination of supplies, equipment, and areas for which they are responsible in the performance of their primary duties.	X		X	X
Operate and maintain assigned decontamination equipment.	X		X	X
Establish and operate a personnel decontamination station where applicable.	X		X	X
Take measures before an attack to prevent contamination and after an attack to avoid the spread of contamination.	X		X	X
Officers and NCOs				
Deployment of NBC observers and detection devices.	X		X	X
NBC monitoring, survey, and reconnaissance.	X		X	X
Survival procedures before, during, and after an NBC attack or <i>friendly</i> nuclear strike.	X		X	X
CBRN downwind hazards.	X		X	X
Radiation dose control, exposure rules, and record keeping.	X		X	X
General protective values of material against radiation, including the selection of buildings and the construction of shelters.	X		X	X
Contamination control procedures for the permanent or temporary prevention, reduction, or neutralization of contamination for maintaining or strengthening an efficient conduct of operations.	X		X	X

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables V-2 through V-7.

Table V-11. NCB Specialists (non-medical) Basic Standards of Proficiency for NBC-D

CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Command NBC-D officers and enlisted personnel in cooperation with the functional groups of the staff				
Assist the commander in providing policy and guidance to lower echelons in all matters pertaining to the development of an NBC-D capability.	X		X	X
Plan, conduct, and monitor NBC-D training within the command.	X		X	X
Evaluate the capability of lower echelons to survive an NBC attack and to continue operations in an NBC environment.	X		X	X
Keep abreast of new TTP in NBC defense.	X		X	X
Act in the capacity of an advisor to the commander on all matters pertaining to the NBC-D of subordinate units/formations. When augmented, be responsible for the NBCWRS.	X		X	X
Recommend employment of special NBC-D elements/units, if available.	X		X	X
Operate and use automated systems for calculations and data processing where appropriate. If an automated system is not available, personnel in NBC centers must be able to perform the same tasks manually.	X		X	X
Act as an advisor to the commander on all matters pertaining to cooperation in NBC-D with units/agencies of other nations.	X		X	X
Unit NBC-D officers and enlisted personnel (assisted by enlisted alternates)				
Provide technical assistance to the commanders and staff on NBC-D training and operations.	X		X	X
Coordinate the unit's NBC-D activities.	X		X	X
Provide NBC-D training to achieve basic operating standards of proficiency for the unit, the individuals of the unit.	X		X	X
Plan and supervise NBC-D training aspects of operational training exercises and maneuvers.	X		X	X
Supervise preparation of unit NBC-D SOPs and adapt them to existing plans of other units as required.	X		X	X
Supervise operations and maintenance of NBC material.	X		X	X
Determine by dosimetry or by calculation (as appropriate) the total dose and time of stay in and/or transit through radiological contaminated areas to avoid exceeding command exposure guidance.	X		X (no dosimetry training)	X
Prepare fallout prediction patterns and perform the tasks of the NBCWRS(may be assigned to meteorological, operational, and/or navigational officers).	X		X	X
Plan NBC reconnaissance and advise commanders on the best routes to cross or bypass an NBC contaminated area.	X		X	X
Plan and coordinate decontamination within the unit and advise the commander.	X		X	X
Maintain records of the unit's radiation exposure.	X		X	X
Estimate downwind hazard for chemical attacks.	X		X	X
Report NBC data to next higher Headquarters and perform the NBC reporting and warning tasks.	X		X	X

CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Evaluate individual and unit competence in NBC-D and advise the commander on the unit's ability to survive and to continue operations in an NBC environment	X		X	X
Operate and use data processing devices and possess basic knowledge of the structure of programs used in NBC warning and reporting where appropriate.	X		X	X
Additionally, all NBC-D officers/NCOs				
Identify the hazards related to risks of Low Level Radiation (LLR), release other than attack (ROTA), and Toxic Industrial Materials (TIM)	X		X	X
Make contingency plans for units facing LLR, ROTA, and TIM hazards	X		X	X
Act as an advisor to the commander on all matters pertaining to LLR, ROTA, and TIM hazards.	X		X	X

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables V-2 through V-7.

Table V-12. NCB Specialists (non-medical) Basic Standards of Proficiency for Commanders

CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Understand the principles of NBC-D.	X		X	X
Know the defense organization and the NBCDE available.	X		X	X
Assess the capabilities of the NBC-D forces under their command.	X		X	X
Assess the effects of NBC munitions on unit/formation, especially on operations to be conducted.	X		X	X
Issue orders and take measures depending on situation and mission.	X		X	X
Plan operations taking into account the NBC threat and the readiness of units for operations in an NBC environment.	X		X	X
Estimate the effects of wearing NBC IPE for an extended period of time and understand what measures can be taken to mitigate those effects on the combat effectiveness and well being of their forces.	X		X	X
Be familiar with the available medical prophylactic countermeasures.	X		X	X
Be familiar with integration of NBC training in exercises.	X		X	X

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables V-2 through V-7.

The final table, Table V-13, identifies the Survival and Unit Basic Operating Standards. Each unit must develop and maintain a capability for the successful accomplishment of its mission in an NCB environment. Planning and training for this capability will include preparation of a unit NCB standard operating procedure (SOP) and frequent exercises to ensure familiarity in applying the SOP. Unit standards of proficiency are shown as survival and basic operating standards.

Table V-13. NCB Specialists (non-medical) Survival and Unit Basic Operating Standards

CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Take immediate and correct action upon warning of an imminent NBC attack or arrival of a CB agent or radiological fallout.	X		X	X
Determine the presence and nature of NBC hazards in the unit's area and take effective measures to mitigate, to the extent possible, the effects of an NBC attack.	X		X	X
Properly use unit NBC protective equipment and supplies and maintain them in a high state of serviceability and readiness.	X		X	X
Enforce a high order of health, hygiene, and sanitation to minimize the spread of disease following a biological attack.	X		X	X
Maintain a degree of protection appropriate to the risk while continuing to conduct the primary mission of the unit.	X		X	X
Perform necessary decon of supplies, equipment, and areas for which it is responsible in the performance of its primary duties.	X		X	X
Delineate the areas of an NBC hazard.	X		X	X
Delineate contaminated areas and mark them by using standard signs.	X		X	X
Cross, bypass, or function in contaminated areas with minimum loss of efficiency, decontaminating where necessary.	X		X	X
Operate efficiently over an extended period of time (to be determined by the commander based on such factors as weather conditions and equipment specifications) with personnel in full protective equipment to include wearing the protective mask.	X		X	X
Report nuclear detonations, CB attacks, and associated hazards, hazard areas, ROTAs.	X		X	X
Assign NBC personnel based on standards of proficiency outlined in <i>FM 3-11</i> .	X		X	X

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables V-2 through V-7.

B. ARMY DOCTRINE

According to *Army Regulation (AR) 350-1, Army Training and Leader Development*, “the Army’s mission is to provide the necessary forces and capabilities to the combatant commander (COCOM) in support of the National Security and Defense Strategies.”⁴² The regulation assigns the commandants and commanders of major Army command schools the responsibility for developing, maintaining, archiving, and providing access, via Knowledge Centers, to the “training strategies, programs, and

⁴² U.S. Army. Headquarters, Department of the Army. *Army Regulation. 350-1, Army Training and Leader Development*, 13 January 2006, p. 1.

doctrine-based instructional materials/resources for which they are the proponent.”⁴³ Further, it requires them to conduct evaluations and support in the development of new or revised doctrine from other Army sources, as well as sources external to the Army.

Commanders; trainers; and doctrine, combat, and training developers who develop doctrine for use at the tactical level use many source documents. One such publication is *FM 7-15, Army Universal Task List (AUTL)*. The AUTL provides combat, doctrine, and training developers with a common language and reference system while establishing a list of essential tasks required for operational mission accomplishment. Further, it is a basis for the development of unit-specific Army Readiness Training Evaluation Program Mission Training Plans (MTPs).⁴⁴

Although much of the Army’s formal training for Service members is conducted during initial entry training (IET), *FM 3-11* establishes additional formal training requirements for enlisted personnel whose primary duties involve unit NCB defense activities.⁴⁵

C. NAVY DOCTRINE

Navy NCB doctrine and implementation varies with the location, type and status of assets. For examples, the doctrine applicable to shore facilities and base installations differs from that for deploying Fleet assets—ships, submarines and aircraft.

Chief of Naval Operations (CNO) Instruction 3440.17, Navy Installation Emergency Management (EM) Program, applies to all Naval installations and facilities and is supplemented by *Commander of Naval Installations Command Instruction (CNIINST) 3440.17, Navy Installation Emergency Management (EM) Program Manual*. For bases, installations, and facilities, “emergency and consequence management” applies to both natural and man-made hazards—including NCB—that may impact those stationed, working or living on a military installation. These instructions establish the roles and responsibilities for response on a Naval installations, as well as procedures to coordinate Navy commands with other Services, Federal, state and local authorities for a collaborative approach to emergency. Further, these documents establish training and exercise requirements to facilitate preparedness of those who may be required to respond

⁴³ Ibid., p. 37.

⁴⁴ US Army. Headquarters, Department of the Army. *Field Manual 7-15, The Army Universal Task List*. Washington, DC: August 2003, p. x.

⁴⁵ *FM 3-11*. Op. cit., p. G-1 to G-9.

to or continue operations during a disaster. Where possible, training is expected to be conducted in accordance with existing national-level certifications; additional training is provided via Web-based instruction or training provided by designated NCB-trained individuals.⁴⁶

U.S. Navy *Chief of Naval Operations Instruction (OPNAVINST) 3400.10F, CBR-D Requirements Supporting Operational Fleet Readiness*, applies to all Navy activities for operations in high-threat or potentially contaminated environments and assigns Navy responsibilities for establishing mission requirements and implementing policy governing chemical, biological, and radiological defense (CBR-D). This instruction further assigns the Director of Naval Training the responsibility for developing and implementing individual basic, general, and specific training for CBR-D based on requirements set forth by the warfare sponsors and United States Fleet Forces Command and fleet commanders.⁴⁷ This instruction also describes the roles that other Naval personnel have in CBR-D doctrine and training. The Deputy Chief of Naval Operations is responsible for reviewing Navy CBR-D planning policy and ensuring that it is in compliance with national guidance, as well as establishing the Navy position on CBR-D matters. To facilitate the development of doctrine and the associated training, the Director of Naval Intelligence gathers, analyzes, and disseminates NCB threat information.⁴⁸

Similarly, the *Naval Surface Forces Training Manual* and the *Naval Air Forces Training Manual* provide detailed training guidance and requirements for the surface and aviation communities, including the CBR-D individual and unit training and personnel qualification requirements. These documents are not currently fully aligned with the multi-Service TTPs, as evidenced in Tables V-2 through V-7. These documents, however, do provide the basic CBR-D requirements expanded on in additional Naval manuals and TTP documents.

One such manual, *Navy Tactical Reference Publication (NTRP) 3-20.31.470, Shipboard BW/CW Defense and Countermeasures (commonly referred to as Naval Ships'*

⁴⁶ US Navy. Chief of Naval Operations. *OPNAVINST 3440.17, Navy Installation Emergency Management (EM) Program*. 22 July 2005, p. 13.

US Navy. Commander Navy Installations Command. *CNIINST 3440.17, Navy Installation Emergency Management (EM) Program*. 27 October 2005, p. 732.

⁴⁷ US Navy. Chief of Naval Operations. *OPNAVINST 3400.10F, Chemical, Biological and Radiological (CBR) Defense Requirements Supporting Operational Fleet Readiness*. 22 May 1998, p. 6.

⁴⁸ *Ibid.*, p. 6.

Technical Manual (NSTM) 470), states, “Chemical and Biological (CB) warfare defense is not a function that a ship performs in isolation from other tasks. A ship is expected to operate in hazardous environments, including a variety of toxic environments. A chemical or biological environment should be viewed as a potential overlay on any warfare task.”⁴⁹ NCB hazards have the potential to impact each function and mission of a ship, including flight deck operations, well deck operations, weapons drills, mass casualty events, and others, all of which should be exercised under NCB conditions. The document points out that with regular training, the loss of operational capability associated with wearing personal protective equipment can be minimized. In addition, this chapter of the NSTM provides technical information needed “to make informed decisions in a CB environment, to employ CB countermeasures and to utilize CB defense equipment in port and underway.”⁵⁰

NSTM 470 identifies three types of training: acclimation; integration; and detection and decontamination, as well as specific training requirements.⁵¹

- *Acclimation:* Frequent training in protective clothing and equipment is beneficial.
- *Integration:* Training should be integrated and involve personnel performing mission-related tasks (ashore and afloat) appropriate to their specialties while wearing protective clothing. During a ship's pre-deployment training cycle, NCB training, along with other training, is assessed through drills and exercises by the Afloat Training Group (ATG).
- *Detection and Decontamination:* An approved training simulant is available for practicing detection and decontamination techniques. Detection and decontamination is exercised and evaluated as part of shipboard training evolutions and assessments.
- *Specific Requirements:* Certain billets require specialized training to perform required tasks. The Supply Officer, Medical Representative and Damage Control Assistant have identified responsibilities and require specialized NCB training. Additionally, bridge personnel shall be trained to monitor installed Chemical and Biological (CB) systems and operate manual CB detection systems. Operational Specialists are trained in NCB hazard and reporting procedures.

⁴⁹ *Navy Tactical Reference Publication (NTRP) 3-20.31.470, Shipboard BW/CW Defense and Countermeasures, Revision 4.* Naval Sea Systems Command, Washington Naval Yard, DC: 1 November 2006, p. 470-1-1.

⁵⁰ *Ibid.*, p. 470-1-1.

⁵¹ *Ibid.*

NSTM 470 also establishes standards of proficiency, including the requirement that Service members be able to don a mask within nine seconds and the full chemical protective ensemble within eight minutes to conform to North Atlantic Treaty Organization (NATO) standards.⁵²

Additional documents establish requirements and proficiencies for common Naval personnel and specific Naval communities, including the surface community and the aviation community. Further, the Navy and the U.S. Coast Guard have a long-standing relationship in sharing information, procedures and equipment. In June 2006, senior Navy and Coast Guard officials formed a “Commonality Working Group” that meets almost monthly to review areas of common interest. Among those areas is the response to potential NCB threats, in particular threats that might be faced during Visit, Board, Search and Seizure (VBSS) activities.

D. AIR FORCE DOCTRINE

The Air Force strives to meet counter-chemical, biological, radiological, and nuclear (C-CBRN) education and training requirements through formal education (PME) and technical training; major command-level, base-level, other Service, intra-agency education and training; and appropriate civilian academic institutions. Air Force policy is to train and equip personnel in or deployable to a chemical, biological, radiological, nuclear, and high-yield explosive (CBRNE) medium- or high-threat area. Air Force doctrine requires all Air Force personnel to have the appropriate knowledge to perform (C-CBRN) operations across the spectrum of military operations. The U.S. Air Force identifies C-CBRN operations as activities taken to detect, deter, disrupt, deny, or destroy an adversary’s NCB capabilities and to minimize the effects of an enemy CBRN attack. According to *Air Force Doctrine Directive (AFDD) 2-1.8, Counter-Chemical, Biological, Radiological, and Nuclear Operations*, the Air Force pillars of C-CBRN operations are proliferation prevention, counterforce, active defense, passive defense, and consequence management.⁵³

Individuals must be trained in the concepts of NCB defense so that they can survive under conditions of attack and contribute to the survivability and operating proficiency of the unit. Air Force and multi-Service instructions, manuals, handbooks,

⁵² Ibid., p. 470-1-5.

⁵³ US Air Force. *Air Force Doctrine Document (AFDD) 2-1.8, Counter-Chemical, Biological, Radiological, and Nuclear Operations*. 26 January 2007, p. viii.

and pamphlets provide substantive information for preparations to organize, equip, and train for emergency management (EM) operations.

- Individual survival standards of proficiency are shown in survival and basic operating actions. Survival standards are those that the individual must master in order to survive CBRNE attacks.
- Basic operating standards are those, which the individual must master in order to contribute to the continued operations of the unit as a whole under CBRNE conditions.

AFDD 2-1.8 states: “Each Airman must possess an appropriate level of education, commensurate with rank and Air Force specialty, in CBRN principles, threat environment, agent characteristics, and appropriate mitigation strategies in order to ensure an operational capability in a CBRN attack...Air Force personnel with responsibilities for C-CBRN functions should also be cognizant of C-CBRN capabilities of local agencies, other Services, allied, and coalition partners.”⁵⁴ Much of the required education is conducted at rank-specific developmental education courses, in addition to selected specialities’ required courses.

AFDD 2-1.8 provides the Air Force doctrine for combating CBRN weapons. It reiterates the definition provided in the *National Military Strategy to Combat Weapons of Massive Destruction*, stating that passive defense includes measures to minimize or negate the vulnerability to, and minimize effects of NCB use against, U.S. and partner/allied forces, as well as U.S. Military interests, installations, and critical infrastructure. “Activities associated with passive defense include preparation and planning for operations in a CBRN environment and are organized as sense, shape, shield, and sustain measures. In uncertain or hostile environments, passive defense measures include those consequence management measures designed to save lives and to restore and sustain wartime mission operations.”⁵⁵

AFDD 2-1.8 describes the Air Force C-CBRN Education, Training, and Exercise Program as “a lifecycle approach that gives individuals the appropriate knowledge, skills, and abilities to operate in a CBRN environment.”⁵⁶ Airmen receive education and training which is subsequently reinforced through exercises and wargames. The aim is an integrated process that facilitates each Airman receiving NCB passive defense education

⁵⁴ Ibid., p. 54-55.

⁵⁵ Ibid., p. 10.

⁵⁶ Ibid., p. 54.

and training appropriate to their rank, specialty, and job and exercising that knowledge repeatedly at each career stage.⁵⁷

Further, *AFDD 2-1.8* states that to ensure effectiveness, NCB passive defense education and training must be validated through Service, Joint, allied, and coalition exercises and wargames using time-tested principles and experience. During exercises, participants should be expected to demonstrate their ability to don personal protective equipment, perform wartime functions, and continue to operate in a realistic NCB environment. Further, both NCB and all significant exercises and wargames should incorporate NCB events and emphasize both consequence management and operational functions, including: command and control; emergency management; intelligence, surveillance, and post-attack reconnaissance; planning; logistics; medical response; force protection; and individual and collective protection. Commanders should continually assess the impact of training and wargames on their units' abilities to conduct wartime missions.⁵⁸

Air Force Instruction (AFI) 10-2501, Air Force Emergency Management (EM) Program Planning and Operations, "establishes responsibilities, procedures, and standards for mitigation and emergency response to physical threats resulting from major accidents; natural disasters; conventional attacks (including those using high-yield explosives); and terrorist use of CBRN materials."⁵⁹ This instruction also provides a complete list of emergency management training courses and target audiences.

AFI 10-2501 focuses on preparedness and defines the responsibilities and training requirements for personnel assigned to specific, installation-related duties, such as Response Task Force, Emergency Operations Center, and Contamination Control Team. Further, it describes the Air Force's approach to mission sustainment following a man-made or natural disaster through planning, organization, training and equipping personnel, and protecting the critical infrastructures. This instruction provides guidance requiring that all personnel be trained to perform mission-essential tasks while wearing full individual protective equipment (IPE). Additionally, this instruction provides the guidance for initial and sustainment training. The Air Force CBRNE Defense Training Policy establishes a 20-month refresher training requirement for all military personnel

⁵⁷ Ibid., p. 54.

⁵⁸ Ibid., p. 56.

⁵⁹ US Air Force. *Air Force Instruction, AFI 10-2501, Air Force Emergency Management (EM) Program Planning and Operations*. 24 January 2007, p. 1.

stationed in threat areas with high- and medium levels of NCB. The required refresher courses include CBRNE Defense Training Course, Explosive Ordnance Response (EOR) Training Course, and CBRNE Task Qualification Training (TQT).⁶⁰

Air Force Policy Directive (AFPD) 10-26, Counter-Nuclear, Biological, and Chemical Operational Preparedness, “establishes the Air Force C-NBC Operational Preparedness Program and outlines policy to ensure the Air Force plans, organizes, trains, and equips personnel to be able to complete assigned missions under threat or attack of NBC weapons.”⁶¹

There appears to be a discrepancy between Air Force policy and Air Force doctrine. Policy dictates training, as a minimum, for those in or deploying to a theater with a medium or high threat assessment, whereas doctrine calls for NCB education and training as a lifestyle approach with continuous reinforcement and realistic exercises. In practice, the Air Force is working to minimize the potential gaps that might exist by institutionalizing C-CBRN knowledge, skills and abilities and incorporating the required capabilities into existing course curricula and training lesson plans.

E. MARINE CORPS DOCTRINE

“The United States Marine Corps (USMC) philosophy is to train its Marines to accomplish their wartime mission in any type of battlespace condition or environment.”⁶² Integration of NCB training ensures that Marines understand the full aspect of NCB defense. Marine Corps policy requires that all Marine Corps organizations conduct NCB defense training to develop unit integrity, cohesion, and NCB defense operational expertise.

The Marine Air Ground Task Force (MAGTF) CBRN Defense Operating Concept states that “to fight and win under CBRN conditions primarily requires an application of effective counterforce, active defense, and counterfire measures.”⁶³ Additionally, it points out that “passive defense measures serve as secondary CBRN Defense protocols and encompass the four Joint CBRN Functional Concept Categories of

⁶⁰ *AFI 10-2501 – Emergency Management (EM) Program Planning and Operations*. Tyndall AFB, FL: January 2007, p. 69.

⁶¹ *Air Force Policy Directive, AFPD 10-26, Operations, Counter-Nuclear, Biological, and Chemical Operational Preparedness*. 6 February 2001, p. 1.

⁶² *MAGTF Chemical, Biological, Radiological and Nuclear Defense Operating Concept*. Quantico, VA: August 2004, p. 5-2.

⁶³ *Ibid.*, p. 1.

Sense, Shape, Shield, and Sustain. CBRN defense measures are employed at all levels of USMC command.”⁶⁴

Marine Corps Warfighting Publication (MCWP) 3-37, Marine Air Ground Task Force (MAGTF) NBC Defense Operations, provides the doctrinal foundation for all subsequent Marine Corps publications on NBC Defense (NBC-D). It states that “the Marine Corps does not conduct NBC warfare; it conducts warfare in an NBC environment.”⁶⁵ Additionally, the document contains specific lists of passive defense requirements for units, including an SOP for defensive operations in an NCB environment, qualified personnel to teach NCB passive defense to the unit, and NCB-related decision-making capabilities. It also identifies skills and capabilities that units should possess in order to conduct passive defense.⁶⁶

Additional USMC NCB defense training is driven by Marine Corps Orders (MCOs) that establish policy, procedures, and standards. These MCOs are summarized below:

- *MCO 3400.3F, NBC-D Training*, maintains that the USMC “trains its personnel to accomplish their wartime mission in any battlespace condition.”⁶⁷ (In the USMC, NBC readiness is a command responsibility where concentrated training, drills, and exercises are integrated into wargaming scenarios and individual unit training to ensure a thorough understanding of NCB defense operations and procedures. Every Marine is required to recognize an NCB attack; mask and don protective clothing quickly, perform assigned missions wearing protective clothing, and survive and continue to function for extended periods in an NCB environment. All Marine Corps organizations must continually integrate NCB defense training to develop unit integrity, cohesion, and NCB defense operational expertise.⁶⁸
- *MCO P3500.72A, Marine Corps Training and Readiness (T&R) Program*, establishes “training standards, regulations, and policies regarding the training of Marines and assigned Navy personnel in ground combat, combat support, and

⁶⁴ Ibid., p. 1.

⁶⁵ US Marine Corps. *Marine Corps Warfighting Publication, MCWP 3-37, MAGTF Nuclear, Biological, and Chemical Defense Operations*. Quantico, VA: 21 September 1998, p. 5-1.

⁶⁶ Ibid., p. 4-1 – 4-6.

⁶⁷ US Marine Corps. Commandant of the Marine Corps. *Marine Corps Order, MCO 3400.3F, Nuclear, Biological, and Chemical Defense (NBCD) Training*. 1 March 2004, p. 2.

⁶⁸ Ibid.

combat service support occupational fields.”⁶⁹ It states that because combat skills are the USMC’s highest priority, NCB training is an area the Corps must strive to improve upon. The manual encourages that NCB defense training be an integral part of all training plans, and training events defined in the manual (MCO P3500.72A) should be trained under NCB conditions whenever possible.⁷⁰

- *MCO 3500.70, Nuclear, Biological, and Chemical Defense Training and Readiness Manual*, promulgates “training policies, procedures, and standards for NBC-D specialists and officers that will assist in achieving and maintaining combat readiness.”⁷¹ This single document seeks to capture the specialized, collective, and individual training requirements to help prepare units to accomplish their combat mission.⁷²

F. DEFENSE THREAT REDUCTION AGENCY (DTRA) DOCTRINE

As a combat support agency, DTRA’s mission is “to safeguard the United States and its allies from weapons of mass destruction (WMD) (chemical, biological, radiological, nuclear, and high yield explosives) by providing capabilities to reduce, eliminate, and counter the threat and mitigate its effects.”⁷³ The agency also directly supports USSTRATCOM in combating WMD and USJFCOM in Joint doctrine development.⁷⁴ In these capacities, DTRA participates in the development and revision of Joint doctrine for NCB defense.⁷⁵

G. INTERNATIONAL DOCTRINE – U.S. ARMY NUCLEAR AND COMBATING WEAPONS OF MASS DESTRUCTION AGENCY

The U.S. Army Nuclear and Combating Weapons of Mass Destruction Agency (USANCA), formerly an Army training and doctrine command activity, became a field operating agency of Headquarters, U.S. Army, effective April 2006. The organization’s mission is to provide nuclear and combating weapons of mass destruction (CWMD)

⁶⁹ US Marine Corps. Commandant of the Marine Corps. *Marine Corps Order, MCO P3500.72A, Marine Corps Ground Training and Readiness (T&R) Program*. 18 April 2005, p. 1.

⁷⁰ Ibid., p. 3.

⁷¹ US Marine Corps. Commandant of the Marine Corps. *Marine Corps Order, MCO 3500.70, Nuclear, Biological, and Chemical Defense Training and Readiness Manual*. 20 September 2004, p. 1.

⁷² Ibid., p. 1-2.

⁷³ DoD Directive 5105.62, Defense Threat Reduction Agency. 28 November 2005, p. 2.

⁷⁴ Ibid., p. 2.

⁷⁵ Ibid., p. 4.

CBDP Annual Report to Congress, April 2007, p. 125.

planning and execution expertise for implementation of Army CWMD strategy and policy at the corps level and above to facilitate the Army's ability to meet Joint operational requirements and national CWMD objectives. The FOA mission essential tasks include:

1. Conducting CWMD planning, training, execution, and formal education in support of Ground Component Commanders, Army Staff elements, Direct Reporting Units, Army Commands, Joint Staff and Combatant Commanders;
2. Integrating CWMD capabilities and requirements into Defense Acquisition, Technology and Logistics Life Cycle Management framework to ensure survivability of Army equipment throughout the spectrum of conflict;
3. Conducting CWMD analysis and pushing solutions to deployed USANCA CWMD planning and assistance teams, and provide rapid, secure, technical responses to all request for information in support of CBRN operations; and
4. Developing CBRN training scenarios and facilitating the interoperability and standardization of equipment, allowing NATO, American, British, Canadian, Australian (ABCA) and coalition forces to successfully fight through contaminated environments.

H. NCB MEDICAL DOCTRINE

A limited number of DoD, Joint, and Service doctrinal publications set specific requirements for NCB military medical education and training. While broad overarching NCB medical doctrine exists for training and education at the Joint and Service levels, it lacks specificity and synchronization.⁷⁶ The Assistant Secretary of Defense (Health Affairs) (ASD(HA)), in a memorandum dated 9 January 2004, provided guidance to the Services regarding NCB training for military medical personnel. This memorandum outlines the requirement for basic-level training in NCB for all DoD medical personnel and establishes the DoD requirement that is met by the four online emergency medical preparedness and response courses (EMPRC).⁷⁷

⁷⁶ DMRTI. *Cross Service Identification of Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives (CBRNE) Training Commonalities and GAP Analysis Report*. Fort Sam Houston, TX: 10 December 2002.

⁷⁷ Assistant to the Secretary of Defense for Health Affairs. All Army Activities (ALARACT) 207/2006, Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives Training for Military Medical Personnel. *Memorandum*. 1 January 2004.

In the Joint arena, *Joint Publication 4-02, Health Service Support (HSS)* is related to three Joint functions: “(1) sustainment, (2) movement and maneuver and (3) protection. HSS promotes, improves, conserves, or restores health within a military system.”⁷⁸ The potential need to conduct operations in an NCB environment poses unique challenges to HSS forces worldwide. To support mission accomplishment in an NCB environment, the component command surgeons, working with the appointed Joint Force Surgeon/Joint Task Force Surgeon (JFS/JTFS), are responsible for guiding and integrating all HSS capabilities available to the command. The Joint Force Commander (JFC) relies on the Services’ respective medical departments to be the force providers for Joint operations by conducting consistent NCB education and training at all levels to ensure maximum levels of readiness when any operation may have to be conducted in an NCB environment. Accordingly, *Joint Publication 4-02* prescribes HSS doctrine/guidance for the Services’ medical departments to follow when implementing NCB medical education and training programs.

Appendix E, available upon request, lists the Joint and Service publications that document the need for military medical education and non-medical military education in CBRN preparedness, response, and protection. Joint doctrine is listed in Table V-1, but also includes:

- *Department of Defense Instruction (DODI) 1322.24, Medical Readiness Training*
- *Department of Defense Directive (DODD) 6200.04, Force Health Protection*
- *DODI 2000.18, Department of Defense Installation Chemical, Biological, Radiological, Nuclear and High-Yield Explosive Emergency Response Guidelines*

Service doctrine which fits into this category and states very general requirements includes:

- *Army FM 8-284/Naval Medical (NAVMED) P-5042/Air Force Manual (AFMAN) (I) 44-156/Marine Corps Reference Publication (MCRP) 4-11.1C – Multi-Service Tactics, Techniques and Procedures for Treatment of Biological Warfare Agent Casualties*
- *FM 3-11.21/MCRP 3-37.2C/Naval Tactics, Techniques, and Procedures (NTP) 3-11.24/Air Force Tactics, Techniques, and Procedures (AFTTP)(I) 3-2.37, Multi-Service Tactics, Techniques and Procedures for Nuclear, Biological, and Chemical Aspects of Consequence Management*

⁷⁸ Joint Chiefs of Staff. *Joint Publication, JP 4-02, Health Service Support*. 31 October 2006, p. ix.

- *FM 8-285/NAVMED P-5041/Air Force Joint Manual (AFJMAN) 44-149/Fleet Marine Force Manual (FMFM) 11-11, Multi-Service Tactics, Techniques and Procedures for Treatment of Chemical Agent Casualties and Conventional Military Chemical Casualties*
- *FM 3-11.86/Marine Corps Warfighting Publication (MCWP) 3-37.1C/NTTP 3-11.31/AFTTP (I) 3-2.52, Multi-Service Tactics, Techniques and Procedures for Biological Surveillance*
- *FM 3-11.34/MCRP 3-37.5/Naval Warfighting Publication (NWP) 3-11.23/AFTTP(I) 3-2.33, Multi-Service Tactics, Techniques and Procedures for NBC Defense of Theater, Fixed Sites, Ports and Airfields*
- *FM 3-11.5/MCWP 3-37.3/NTTP 3-11.26/AFTTP(I) 3-2.60, Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological and Nuclear Decontamination*
- *Army Regulation (AR) 385-61, The Army Chemical Agent Safety Program*
- *FM 8-55, Planning for Health Service Support*
- *FM 3-0, Army Operations*
- *FM 4-02 (FM 8-10), Force Health Protection in a Global Environment*
- *FM 4-02.7 (FM 8-10-7), Health Service Support in a Nuclear, Biological, and Chemical Environment, Tactics, Techniques and Procedures*
- *Commander, Naval Surface Forces Instruction (COMNAVSURFORINST) 6000.1, Shipboard Medical Procedures Manual*
- *Operational Naval Instruction (OPNAVINST) 3400.10F, Navy Installation Emergency Management Program*
- *Marine Corps Order (MCO) 1510.120, Individual Training Standards System for Field Medical Services*
- *MCO 3400.3F, Nuclear, Biological, and Chemical Defense (NBCD) Training*
- *Air Force Policy Directive (AFPD) 32-40, Civil Engineering, Disaster Preparedness*
- *AFPD 10-26, Operations, Counter-Nuclear, Biological, and Chemical Operational Preparedness*
- *AFMAN 10-2602, Nuclear, Biological, Chemical, and Conventional (NBCC) Defense Operations and Standard*
- *AF Handbook 32-4014 Volume I, USAF Operations in a Chemical and Biological (CB) Warfare Environment, Planning and Analysis*
- *AF Handbook 10-2502, USAF Weapons Of Mass Destruction (WMD) Threat Planning And Response; and*

- *AFDD 2-1.8, Counter-Chemical, Biological, Radiological, and Nuclear Operations.*

Military medical schoolhouses, such as the Army Medical Department (AMEDD) Center and School, also have NCB training requirements. These requirements vary from Service to Service.

Additionally, NCB education requirements for certain subsets of Service medical personnel are established in the following publications:

- *ALARACT 207/2006, Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives Training for Military Medical Personnel*, an Army OTSG directive establishing the requirement for and implementation of CBRN training for Army medical personnel;
- *AR 40-68, Medical Services Clinical Quality Management*, which requires Army physician assistants (PA's) – but not any other healthcare providers – to attend the MCBC course at USAMRIID and USAMRICD;
- *Army FM 8-42, Combat Health Support in Stability Operations and Support Operations*, which sets educational requirements for Army Special Medical Assistance and Response Team (SMART) members, including a Chem-Bio SMART and a RAD/Nuclear SMART;
- *FM 3-11.22, Weapons of Mass Destruction Civil Support Teams Tactics, Techniques, and Procedures*, which sets educational requirements for National Guard Weapons of Mass Destruction Civil Support Teams (WMDCST's);
- *BUMEDINST 3400.1, Operational Concepts for Medical Support and Casualty Management in Chemical and Biological Warfare Environments*, which requires Navy Medical Department Officers and Independent Duty Corpsmen assigned to, or in augmentation units for, certain operational forces and units to attend the MCBC course;
- *BUMEDINST 3440.17, Navy Medicine Emergency Management Program [Draft]*, which is a detailed instruction requiring certain Navy medical personnel to complete the EMPRC and other emergency response courses;
- *BUMEDINST 6200.17, Public Health Emergency Officers (PHEOs)*. which requires Navy PHEOs to complete the EMPRC, Medical Management of Chemical and Biological Casualties (MCBC), and Medical Effects of Ionizing Radiation (MEIR) courses in addition to other emergency management courses;
- *Air Force Instruction 10-2501, Air Force Emergency Management (EM) Program Planning and Operations*. which “identifies resources and ensures training for medical first responders and medical emergency responders”;

- *Air Force Instruction 41-106, Medical Service, Medical Readiness, Planning and Training*. which requires certain Air Force Medical Defense Officers and Non-Commissioned Officers (NCOs) to attend the Air Force Medical Nuclear, Biological and Chemical (MNBC) Operations Course; and
- *Air Force Instruction 41-106, Pacific Air Forces (PACAF) Supplement*, which clarifies education and training requirements for PACAF medical personnel.

See Appendix E for more detailed descriptions and key language from these doctrinal publications.

NCB medical education and training requirements historically have been addressed in Service-specific guidance (e.g., instructions and regulations) and Joint Task Lists. These Joint Task Lists provide a list of appropriate tasks, conditions, and measures in a common language and reference system for various users and serve as the foundation for capabilities-based planning across the range of military operations. The Universal Joint Task List (UJTL) supports the DoD in Joint capabilities-based planning, Joint force development, readiness reporting, experimentation, Joint training and education (to include medical NCB), and lessons learned. Service specific task lists include (1) Army: FM 7-15; (2) Navy: M3100.1A; and (3) Air Force: AFDD 1-1. These serve as the basis for language development for Service and Joint mission-essential task lists or Agency Mission-Essential Task List (AMETL) used in identifying required capabilities for mission success.

In addition to the Service and Joint Task Lists, the United States Joint Forces Command (JFCOM), in its role as the combatant commander, is responsible for gathering lessons learned, obtaining direction from the Chairman of the Joint Chiefs of Staff, issuing JFCOM pamphlets, and compiling other combatant commands' evolving CBRN requirements to produce the Effects Based Operations Manual. To date, no specific NCB medical issues are identified in the Effects Based Operations Manual. High interest training requirements are identified per JFCOM's training plan, *Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3500.03A, Joint Training Manual for the Armed Forces of the United States* (currently being rewritten). The guidance provides a process for introducing critical individual training requirements.⁷⁹ The current process generated 51 tier one tasks, 13 of which were medical, and 90 tier two tasks, 30 of which were

⁷⁹ CJCS Manual. *CJCSM 3500.03A, Joint Training Manual for the Armed Forces of the United States*. 1 September 2002.

medical. The Joint Doctrine Education and Training Electronic Information System (JDEIS) is a collection point for current and evolving documents.

High-interest training tasks are systematically incorporated into the Joint Knowledge Development and Distribution Capability (JKDDC) and Joint National Training Capability established as a part of Training Transformation (T2) to provide relevant, timely, and globally accessible Joint knowledge. The process is designed to identify gaps in individual education and training and lead to an integrated solution with appropriate tools, methods, and technologies to fill the needs.

The individual and collective training requirements are combined in the T2 process to affect Joint Professional Military Education (JPME). The JRO-CBRND, in accordance with T2, initiated a process to embed NCB education into JPME. Medical CBRN education is included as a part of the National Defense University proposed JPME requirement.

It is important to note that T2 was initiated in July 2003 by Under Secretary of Defense (USD) (Personnel and Readiness) memo⁸⁰ and formally established in February 2006.⁸¹ The implementation is based on spiral development such that training and education capability is fielded as it becomes available. While identified as an area of interest, NCB medical education and training is a sub-set of more generic medical issues which in themselves are not universally present.

Joint and Service publications have identified some NCB education and training requirements. However, with few exceptions they generally do not delineate which Service member should take what particular course and how often it should be repeated to maintain competency. For example, The *Navy Bureau of Medicine and Surgery (BUMED) Instruction 6200.17, Public Health Emergency Officers (PHEOs)* of 17 October 2006 identifies curricula for PHEO core competency requirements. The courses include MCBC taught at the United States Army Medical Research Institutes for Chemical Defense (USAMRICD) and Infectious Diseases (USAMRIID), and the MEIR course, taught at the Armed Forces Radiobiological Institute (AFRI). There is no mention

⁸⁰ Director, Readiness and Training Policy and Programs, Office of the Under Secretary of Defense for Personnel and Readiness. *Department of Defense Training Transformation Implementation Plan*. Washington, DC: 10 June 2003.

⁸¹ Department of Defense. *Training Transformation Implementation Plan FY2006-FY2011*. 23 February 2006.

as to how often the course should be repeated and what exactly constitutes a Public Health Emergency Officer.

The *General Accounting Office Report 02-38, Chemical and Biological Defense, Department of Defense Needs to clarify Expectations for Medical Readiness*, led the Joint Staff and the ASD(HA) to task the Defense Medical Readiness Training Institute (DMRTI) in April 2002 to review the Services' current Chemical, Biological, Radiological, Nuclear and High Yield Explosives (CBRN) medical education and training and develop a standardized Tri-Service CBRN Training Program for Active, Reserve, Civil Service and Contract personnel.

The Force Health Protection Council (FHPC) recommended approval of the DMRTI *Tri-Service CBRN Training Program* on 22 September 2003. The program consisted of Standards of Proficiency necessary to support Medical CBRN readiness, specific training that must be completed, frequency of training, recommended Tri-Service training programs, metrics to measure compliance, and reporting requirements. The Tri-Service CBRN Training Program would standardize training for all DoD medical personnel, including civil service and contract personnel.⁸² This process was the first tangible step forward that establishes which medical audiences should attend specific NCB courses to fulfill basic/core-level competencies.

The *Tri-Service CBRN Training Program* is an online, distance learning strategy that utilizes the four *Emergency Medical Preparedness and Response Course (EMPRC)* curriculums. The EMPRC curriculums incorporate the NCB medical Standards of Proficiency and have been selected by the Services to fulfill the core knowledge requirements at four levels: Basic, Operator/Responder, Clinician, and Executive/Commander. For example, the Operator/Responder course is intended for non-medical officers and non-commissioned officers and is intended for first responders in military field units. Emphasis is placed on the initial treatment of casualties, transportation, and decontamination of chemical and biological agent casualties. The course objectives are for the participants to recognize the military terms for chemical agents, the clinical effects of the agents, and means of therapeutic intervention in a field environment; recognize methods of managing contaminated and uncontaminated casualties in a field environment; and recognize the historical aspects of chemical agent use in warfare; and identify chemical warfare capabilities practiced in the world today by

⁸² Defense Medical Readiness Training Institute. *Tri-Service CBRNE Training Program*. <http://www.dmrtd.army.mil/>.

countries or by terrorist groups. The clinician's course, intended for healthcare providers, includes similar information but adds topics including diagnosis and treatment. The other courses offer similar information as applicable to the intended target audiences.

I. DOCTRINE GAPS, OBSERVATIONS, AND RECOMMENDATIONS

Gap: General doctrine lag and classification restrictions prevent the consideration of advanced NCB threats and hazards in NCB passive defense education and training.

As noted previously, the Services establish NCB passive defense education and training in accordance with doctrine and requirements, to ensure that Service members develop the required basic NCB passive defense standards of proficiency, skills and capabilities. In the course of the study, however, certain gaps in existing doctrine became clear.

General doctrine lag: Doctrine is reviewed and updated on a multi-year cycle. For example, the Army doctrine is reviewed and updated on a three-year cycle. The other Services may take longer or shorter, depending on the Service, current operations, changes in mission, etc. As a result, doctrine (and the associated requirements, capabilities, and standards of proficiency) consistently lag behind new policies, equipment, and missions. Because doctrine dictates requirements, there is further lag in education and training. As military schools develop curricula based on current doctrine, requirements and programs of record, the education and training are not made available until the doctrine is updated.

Doctrine lag is particularly apparent in the fielding of new equipment, urgent needs equipment, and updated equipment. As required, the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) develops new equipment training, which is deployed with the new equipment. The purpose of the training, however, is to train users on the new system—basic operation, maintenance, etc.—but not on how the equipment fits into the general mission. The training is usually delivered directly to the users but not to the schools or training commands. As a result, until the doctrine and requirements are updated, new equipment training is not incorporated into the schools, the required unit training, or the certification processes (i.e., TTPs or PQS).⁸³

⁸³ This issue was initially identified by Navy SMEs. Conversations with Holly Tatum and Gabe Patricio of the JPEO-CBD on 12 June 2007 further highlighted the issue.

Advanced NCB threats and hazards: A review of current doctrine, requirements, and standards of proficiency for NCB passive defense reveals that the primary focus is on traditional NCB agents. Despite increasing discussion regarding additional, newer agents and evolutions of existing agents, doctrine continues to focus on agents that were known to have been weaponized during and prior to the Cold War. Information regarding newer agents and novel variations of currently existing agents is classified and is therefore not available for incorporation into unclassified doctrine, requirements, or operational publications. Individuals may not need to be trained about the agents themselves, but rather about what actions to take beyond their usual training if it becomes necessary.

Recommendations:

1. The Services should implement existing processes to integrate new information, doctrine, TTPs, standards of proficiency, education, and training prior to doctrine updates; supplement these processes as required.⁸⁴
2. The Joint Requirements Office (JRO), in conjunction with the Services, the Defense Threat Reduction Agency (DTRA), the intelligence community, and other appropriate organizations, should conduct a risk assessment to determine which Non-Traditional Agents (NTAs) and other classified hazards present a threat that should be addressed in NCB passive defense doctrine. The JRO, in conjunction with the Services, DTRA and other appropriate organizations should then determine, for those agents that should be discussed, what information should be declassified and incorporated into doctrine, TTPs, training, and education versus the requirements for protection of intelligence information and the risks of possible proliferation, in accordance with its responsibilities as laid out in the Implementation Plan for the Management of the Chemical Biological Defense Program.⁸⁵

The risk of discussing currently classified NCB threats and hazards, such as NTAs, must be weighed against the disadvantages of not developing unclassified force-wide operational capability to minimize or negate their effects and the resulting vulnerability of U.S. forces. The information that the common Service member needs to

⁸⁴ Ibid. With respect to new equipment training, the JPEO-CBD noted that they are making efforts to include the Services, schools, and trainers in the new equipment training development process.

⁸⁵ *Implementation Plan for the Management of the Chemical Biological Defense Program*. Washington DC: April 2003, p. 3

Aldridge memo. Op. cit.

know may be general enough that passive defense can be made more effective without classification being required.

Gap: The Navy CBRN defense doctrine and requirements appear to omit certain elements of Joint doctrine and multi-Service tactics, techniques, and procedures.

As noted, the Navy's requirements and basic standards of proficiency are likely to differ from those of the other Services as a function of their differing missions and operating environments. In many cases, these differences are noted as exceptions in the Joint and multi-Service publications. Based on information collected in the course of the study and noted in Chapter 5, some doctrine and basic standards of proficiency required for all Service members may not be incorporated into the current requirements as set forth by the Navy and are not noted as exceptions. As the tables in Chapter 5 indicate, some of these capabilities and standards of proficiency may not be applicable to many or all of the Navy's differing communities—surface, submarine, aviation, construction, expeditionary combatant commands, and others. Others may be required for only a small fraction of the Naval force and may be developed at schools, locations or units that the study team is unaware of.

It is important to note that the Navy's passive defense education and training is in alignment with the Service's own requirements.

Recommendation: The Navy should review and update existing Service doctrine, requirements, and training manuals to insure that provided CBRN defense training is aligned with Joint doctrine and multi-Service tactics, techniques, and procedures and to reflect exceptions as necessary.

The Navy is taking action to correct these issues in both the surface and aviation communities, as well as in other areas as necessary. In late-September 2007, the Navy will begin conducting stakeholder discussions on how to bring the Service requirements into alignment with the Joint and multi-Service doctrine.

Observation: Current definitions of Combating Weapons of Mass Destruction (WMD) military mission areas leave room for confusion. This results in unclear responsibilities in NCB doctrine, education, training, and certification.

The National Military Strategy to Combat Weapons of Mass Destruction identifies eight Combating WMD military mission areas. The definitions of these areas are ambiguous and overlapping. For example, the following two definitions apply:

1. Passive defense: Measures to minimize or negate the vulnerability and effects of WMD employed against U.S. and partner/allied Armed Forces, as well as U.S. military interests, installations, and critical infrastructure.
2. WMD consequence management: Actions taken to mitigate the effects of a WMD attack or event and restore essential operations and services at home and abroad.⁸⁶

Other sources suggest that the difference between the two is that “passive defense” applies to military forces in combat, and “consequence management” implies installation protection inside and outside the continental United States, response to NCB and Toxic Industrial Chemicals/Toxic Industrial Material (TIC/TIM) attacks, and assistance either to the federal or a foreign government. Even that differentiation, however, is ambiguous in the literature.

Consequently, it is unclear where certain proficiencies would fall—decontamination, hazard characterization, hazard avoidance, downwind mapping, monitoring and surveillance, and others. These basic skills could be either passive defense, consequence management, or both. As long as an attempt is made to differentiate between these mission areas and to associate proficiencies with a particular mission area rather than an overarching NCB defense mission, challenges will remain regarding the assignment of doctrine, operations, requirements, education, training, and certification.

Currently, NCB passive defense comprises a set of skills and capabilities that every Service member must develop. These skills and capabilities are designed to mitigate the effects of an NCB attack on U.S. forces by educating and training Service members to protect themselves and each other—for example, how to don a mask, how to recognize contamination signs, how to decontaminate oneself.

Despite these skills and capabilities being designated NCB passive defense, these are fundamental skills essential to all the Combating WMD military mission areas. Those conducting active defense, consequence management, elimination, interdiction, and other missions must be able to demonstrate at least the same skills and capabilities as those who solely have to conduct NCB passive defense. They might require additional skills as well, but the need for the fundamentals still remains.

⁸⁶ CJCS. 13 February 2006. *Op. cit.*, p. 30.

Retaining multiple mission areas, each with its own required skills and capabilities, can result in overlaps and omissions—overlaps in those skills and capabilities that need to be taught for every military mission, and omissions if passive defense skills are assumed to have been taught elsewhere.

One solution, therefore, is to establish a single NCB mission—for example, continued operations in an NCB hazard environment—with a set of fundamental, required skills and capabilities, as shown in Figure VIII-1.

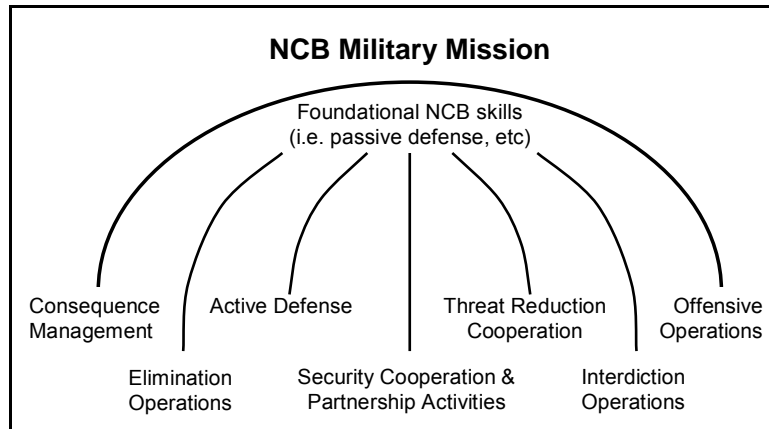


Figure V-1. Representation of Proposed NCB Military Mission with Subordinate Military Mission Areas

Many of those skills and capabilities will be those from the passive defense military mission area, but other mission areas may be drawn on as well. This single overall mission is one that every Service member should be capable of conducting; therefore, it is possible to identify certain skills that every Service member must have. Thus, for that single mission, doctrine, requirements, training, education, and certification can be comprehensively identified.

Additional subordinate mission areas might be identified as necessary, and with them, additional doctrine, requirements, skills, and capabilities. For these additional skills, education, and training would have to be developed. For example, consequence management and interdiction, two Combating WMD military subordinate mission areas, require additional skills that are needed only by those Service members who are engaged in the specific, subordinate missions.

Recommendation: The Department of Defense should establish a single NCB mission with defined Combating WMD subordinate mission areas, as necessary and realign education and training accordingly.

VI. NCB PASSIVE DEFENSE EDUCATION AND TRAINING ACTIVITIES

The key to the execution of strategic guidance is a systematic and progressive training process beginning at entry level. *Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 1800.01C, Officer Professional Military Education Policy (OPMEP)* and *CJCSI 1805.01, Enlisted Professional Military Education Policy (EPMEP)* promulgate the policies, procedures, objectives, and responsibilities for officer and enlisted professional military education. These instructions apply to the Joint Staff, the National Defense University, and the Military Services.

CJCSI 1800.01C “identifies a continuum that reflects the dynamic system of officer career education. It identifies areas of emphasis at each educational level and provides Joint curriculum guidance for PME [professional military education] institutions.”⁸⁷ The continuum provides an organized structure that is divided into five military educational levels:

- *Pre-commissioning*: Military education received at institutions and through programs producing commissioned officers upon graduation.
- *Primary*: Education typically received at grades O-1 through O-3.
- *Intermediate*: Education typically received at grade O-4.
- *Senior*: Education typically received at grades O-5 or O-6.
- *General/Flag Officer (G/FO)*: Education received as a G/FO.

Joint Officer Professional Military Education (OPME) helps prepare officers to operate in a Joint environment or as part of a Joint force.⁸⁸

Similarly, *CJCSI 1805.01*, reflects “the dynamic system of enlisted career education and individual training and identifies areas of emphasis that support defined

⁸⁷ Chairman of the Joint Chiefs of Staff (CJCS) Instruction. *CJCSI 1800.01C, Officer Professional Military Education Policy (OPMEP)*. 22 December 2005, p. A-A-1.

⁸⁸ *Ibid.*, p. A-A-2.

educational levels.”⁸⁹ The continuum for educating enlisted personnel also provides an organized structure that is divided into five military educational levels:⁹⁰

- *Introductory*: Individual military training and education received at Service initial entry training sites and basic skill development schools, typically in pay grades E1 through E3.
- *Primary*: Individual military training and education typically received in pay grades E-4 through E-6.
- *Intermediate*: Individual military training and education typically received in pay grade E-7.
- *Senior*: Individual military training and education typically received in pay grades E-8 and E-9.
- *Executive*: Individual military training and education received as a command Senior Enlisted Leader (SEL). Command SELs are individuals in the pay grade of E-9 who are serving as the SEL in a general or flag officer-led organization.

A. DOD CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR AND (HIGH-YIELD) EXPLOSIVES DEFENSE EDUCATION AND TRAINING

The detailed discussion of nuclear, chemical, and biological (NCB) defense education and training is provided in the Service-specific sections. For the purposes of this study, training is characterized by the following four categories:

- *Individual Training*: Individual training is limited to the primary level in the OPME continuum and the introductory and primary levels in the EPME continuum.
- *Specialty Training*: Specialty training is training that is provided to individuals to prepare them to perform duties at an advanced level of proficiency.
- *Unit Training*: Unit training is training that is conducted in the unit that is the responsibility of the commander. It can either be individual training in the unit or unit team or collective training.
- *Exercises*: Exercises are military maneuvers or simulated wartime operations involving planning, preparation, and execution. It is carried out for the purpose of training, assessment, and evaluation.

⁸⁹ Chairman of the Joint Chiefs of Staff (CJCS) Instruction. *CJCSI 1805.01, Enlisted Professional Military Education Policy (EPMEP)*. 28 October 2005, p. A-A-1.

⁹⁰ *Ibid.*, p. A-A-2.

Tables VI-1 through VI-6 outline the CBRN defense training requirements for all Service members and indicate both where each task is taught and the frequency which refresher training or evaluation is required, if applicable.

Acronyms Defined for Table VI-1 through VI-6

3E9	Air Force Specialty – Readiness, Emergency (Consequence) Management	LTA	Low Threat Area
AIT	Advanced Individual Training	MCT	Marine Combat Training
ANCOC	Advanced Non-Commissioned Officers Course	MTA	Medium Threat Area
ASBC	Air & Space Basic Course	NBC	Nuclear, Biological, and Chemical
BCT	Basic Combat Training	NBC-D	Nuclear, Biological, and Chemical Defense
BECC	Basic Engineering Common Core	NBCDE	Nuclear, Biological and Chemical Defense Equipment
BNCOC	Basic Non-Commissioned Officers Course	NBCWRS	NCB Warning and Reporting System
BOLC	Basic Officers Leader Course	NCO	Non Commissioned Officer
C ³	Chemical, Biological, Radiological and Nuclear Captain's Career Course	NECC	Naval Expeditionary Combat Command
CALL	Center for Army Lessons Learned	OCS	Officer Candidate School
CB	Chemical and Biological	PQS	Personnel Qualifications Standards
CBR-D	Shipboard CBR Defense Operations and Training Specialist Course	ROTA	Release Other Than Attack
CBRN	Chemical, Biological, Radiological, and Nuclear	RPLL	Repair Locker Leaders' Course
CCA	Contamination Control Area	RTC	Recruit Training Command
CP	Collective Protection	SEDC	Senior Enlisted Damage Control
DCA	Damage Control Assistant	SOP	Standard Operating Procedure
DPOS	Disaster Preparedness Operational Specialist Course	SWO	Surface Warfare Officer Qualification
EBC	Echelons below Corps	TBS	The Basic School (US Marine Corps)
HTA	High Threat Area	TIM	Toxic Industrial Material
IET	Initial Entry Training	TQT	Task Qualification Training
IMT	Initial Military Training	TTPs	Tactics, Techniques, and Procedures
IPE	Individual Protective Equipment	WLC	Warrior Leaders Course
LLR	Low Level Radiation	WOBC	Warrant Officer Basic Course

Table VI-1. Education and Training Activities to Meet Individual Standards of Proficiency

Non-CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Individual Protection				
Individuals should normally receive initial NBC-D training upon entering military service and receive refresher training at regular intervals thereafter.	BCT/BOLC Unit Annually	RTC/BECC/ PQS	BMT/ASBC Flight 20 months	MCT/TBS Unit Annually
Individual Survival Standards				
Recognize attacks with NBC munitions and take protective action.	BCT/BOLC Unit Annually	RTC/BECC/ PQS	BMT/ASBC CBRNE Defense 20 months	MCT/TBS Unit Annually
Recognize NBC alarms and signals.	BCT/BOLC Unit Annually	RTC/BECC/ PQS	BMT/ASBC CBRNE Defense 20 months	Marine Corps Recruit Depot (MCRD)/TBS Unit Annually
Recognize the existence of CBRN hazards and take protective action.	BCT/BOLC Unit Annually	BECC/PQS	BMT/ASBC CBRNE Defense 20 months	MCT/TBS Unit Annually
Properly don, seat, clear, and check the respirator/protective mask.	BCT/BOLC Unit Annually	RTC/BECC/ PQS	BMT/ASBC CBRNE Defense TQT 20 months	MCRD/TBS Unit Annually
Properly don protective clothing. The individual must be able to relate the use of protective clothing to the graduated levels of the NBC threat.	BCT/BOLC Unit Semi-Annually	BECC/PQS	BMT/ASBC CBRNE Defense TQT 20 months	MCT/TBS Unit Annually
Take protective measures against thermal radiation (light, flash, and heat), a blast wave, and radiation effects of nuclear explosions.	BCT/BOLC Unit Annually	BECC/PQS	BMT/ASBC CBRNE Defense 20 months	MCT/TBS Unit Annually
Carry out immediate individual decontamination.	BCT/BOLC Unit Annually	BECC/PQS	BMT/ASBC CBRNE Defense 20 months	MCT/TBS Unit Annually
Follow the procedures for the removal of NBC individual protective equipment.	BCT/BOLC Unit Semi-Annually	BECC/PQS	BMT/ASBC CBRNE Defense 20 months	MCT/TBS Unit Annually
Recognize if casualties are contaminated and perform first aid (self- & buddy-aid).	BCT/BOLC Unit Annually	BECC/PQS (self&buddy aid only)	BMT/ASBC CBRNE Defense 20 months	MCT/TBS Unit Annually
Practice good personal health and hygiene as a protective measure against the spread of disease.	BCT/ BOLC Unit Annually	RTC/BECC/ PQS	BMT/ASBC CBRNE Defense 20 months	MCRD/OCS/ USNA Unit Annually

NOTE: The yellow indicates that there is a doctrine/requirement. The blocks that are yellow but have no identified school/command/education course may be gaps.

* BECC and PQS apply to the Surface fleet. BECC is the initial school engineering ratings. PQS is the method used for tracking surface force shipboard education, training and qualification. Additional Naval communities, including the Naval construction battalions (SeaBees), Naval expeditionary combat commands (NECCs), aviation squadrons, and other units, conduct education and training for these skills locally at their own commands as required.

** For personnel stationed in MTAs and HTAs. Personnel stationed in LTAs that fill standard deployable UTCs require training every 20 months.

Table VI-2. Education and Training Activities to Meet Individual Basic Operating Standards of Proficiency

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Maintain NBC individual protective equipment (IPE) in a high state of serviceability at all times.	BCT/BOLC Unit Annually	PQS	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Be proficient in taking specific actions required for maintaining operating efficiency before, during, and after NBC attacks in order to reduce the effects of NBC weapons.	BCT/BOLC AIT/IMT	CBR-D PQS	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Recognize or detect NBC agent contamination and perform immediate decontamination of self, clothing, personal equipment, individual weapon, vehicle, and crew-served weapon.	BCT/BOLC Unit Annually	CBR-D/PQS (decon of self, clothing, equipment, spaces, etc)	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Recognize all standard marking signs that indicate chemical, biological, or radiological contaminated areas.	Unit Annually	BECC/PQS	BMT/ASBC CBRNE Defense 20 months**	MCT/TBS Unit Annually
Cross or bypass marked NBC contaminated areas with minimum danger to self.	Unit Annually	Not taught (may not be considered applicable for many Naval applications)	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Demonstrate proficiency in performing primary military duty—to include the use of crew/personal weapon(s)—while in the individual protective equipment for extended periods.	Unit Semi Annually	DPOS (may not be considered applicable for collectively protected environments)	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Be familiar with the procedures to be followed at the decontamination facilities of military service.	Unit	BECC/PQS	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Be familiar with the principles of Collective Protection (CP), including entry and exit from CCAs and shelter organization and operation where applicable.	Unit	BECC/PQS	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Demonstrate familiarity with the use of dosimetry devices and CB detection and monitoring equipment where applicable.	Unit Annually	BECC/PQS	3E9-series personnel only (no dosimetry training)	Unit Annually
Demonstrate the ability to perform the duties of an NBC observer.	WLC Unit Annually	CBR-D/DPOS (Seabees & 4805s)	3E9-series personnel only	Unit Annually

NOTE: The yellow indicates that there is a doctrine/requirement. The blocks that are yellow but have no identified school/command/education course may be gaps.

* BECC, CBR-D, and PQS apply to the Surface fleet. BECC is the initial school engineering ratings. PQS is the method used for tracking surface force shipboard education, training and qualification. Additional Naval communities, including the Naval construction battalions (SeaBees), Naval expeditionary combat commands (NECCs), aviation squadrons, and other units, conduct education and training for these skills locally at their own commands as required.

** For personnel stationed in MTAs and HTAs. Personnel stationed in LTAs that fill standard deployable UTCs require training every 20 months.

**Table VI -3. Education and Training Activities to Meet Basic Standards of Proficiency for
Selected Personnel with Taskings Requiring Additional Training**

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Personnel trained in NBC monitoring, survey, and reconnaissance				
Operate and maintain NBC equipment applicable to the task.	Area CBRN Defense Course or Unit Trained by CBRN NCO Annually	BECC CBR-D/DPOS Adv. PQS (ship's 4805s maintain equipment)	Flight Annually**	Unit Quarterly
Recognize attacks with NBC munitions and fully understand unit procedures for implementing warnings and providing protection.	Area CBRN Defense Course or Unit Trained by CBRN NCO Annually	BECC CBR-D/DPOS Adv. PQS	Flight Annually**	Unit Quarterly
Detect and identify contamination and organize and conduct NBC monitoring and survey operations.	Area CBRN Defense Course	BECC CBR-D/DPOS Adv. PQS	Flight Annually**	Unit Quarterly
Monitor personnel, food, drinking water, and equipment for NBC contamination and effectiveness of decontamination measures.	AIT/IMT BNCOC BOLC	CBR-D/DPOS	Flight Annually**	Unit Quarterly
Collect samples of suspected biological contamination and forward them as directed.	Area CBRN Defense Course	Adv. PQS	Flight Annually**	Unit Quarterly
Collect samples of liquid or solid chemical agents.	Area CBRN Defense Course	Not taught	Flight Annually**	Unit Quarterly
Mark NBC contaminated areas, equipment, supplies, and stores with standard marking signs.	Area CBRN Defense Course or Unit Trained by CBRN NCO Annually	BECC/ CBR-D/DPOS Adv. PQS	Flight Annually**	Unit Quarterly
Provide data for compilation of NBC reports.	Area CBRN Defense Course or Unit Trained by CBRN NCO Annually	DCA/SEDC	Flight Annually**	Unit Quarterly
Organize and conduct NBC monitoring and surveying operations.	Area CBRN Defense Course or Unit Trained by CBRN NCO	RPLL CBR-D/DPOS DCA/SEDC	Flight Annually**	Unit Quarterly
Operate detection and survey equipment for recognizing and detecting hazards from CBRN releases.	Area CBRN Defense Course or Unit Trained by CBRN NCO	CBR-D/DPOS DCA/SEDC	Flight Annually**	Unit Quarterly
Personnel trained in contamination control				
Perform necessary decontamination of supplies, equipment, and areas for which they are responsible in the performance of their primary duties.	Area CBRN Defense Course or Unit Trained by CBRN NCO Annually	RPLL CBR-D/DPOS DCA/SEDC Adv PQS	Flight Annually**	Unit Quarterly
Operate and maintain assigned decontamination equipment.	Area CBRN Defense Course or Unit Trained by CBRN NCO	CBR-D/DPOS	Flight Annually**	Unit Quarterly
Establish and operate a personnel decontamination station where applicable.	Area CBRN Defense Course or Unit Trained by CBRN NCO	RPLL CBR-D/DPOS DCA/SEDC Adv PQS	Flight Annually**	Unit Quarterly
Take measures before an attack to prevent contamination and after an attack to avoid the spread of contamination.	Area CBRN Defense Course or Unit Trained by CBRN NCO Annually	CBR-D/DPOS DCA/SEDC	Flight Annually**	Unit Quarterly

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Officers and NCOs				
Deployment of NBC observers and detection devices.	Area CBRN Defense Course	RPLL DCA/SEDC	As required	Unit Quarterly
NBC monitoring, survey, and reconnaissance.	Area CBRN Defense Course	RPLL DCA/SEDC Adv. PQS	As required	Unit Quarterly
Survival procedures before, during, and after an NBC attack or <i>friendly</i> nuclear strike.	Trained by Unit CBRN NCO Annually	Not taught	As required	Unit Quarterly
CBRN downwind hazards.	Area CBRN Defense Course	Not taught	As required	Unit Quarterly
Radiation dose control, exposure rules, and record keeping.	Area CBRN Defense Course	RPLL DCA/SEDC (record keeping)	As required	Unit Quarterly
General protective values of material against radiation, including the selection of buildings and the construction of shelters.	CBRN Defense Course	CBR-D/DPOS Locally for Seabees	As required	Unit Quarterly
Contamination control procedures for the permanent or temporary prevention, reduction, or neutralization of contamination for maintaining or strengthening an efficient conduct of operations.	Area CBRN Defense Course or Unit Trained by CBRN NCO	DCA/SEDC Adv. PQS	As required	Unit Quarterly

NOTE: The yellow indicates that there is a doctrine/requirement. The blocks that are yellow but have no identified school/command/education course may be gaps.

* BECC, DCA/SEDC, RPLL, and PQS apply to the Surface fleet. BECC is the initial school engineering ratings. PQS is the method used for tracking surface force shipboard education, training and qualification. Additional Naval communities, including the Naval construction battalions (SeaBees), Naval expeditionary combat commands (NECCs), aviation squadrons, and other units, conduct education and training for these skills locally at their own commands as required.

** Through Air Force Emergency Management (EM) Program Installation Exercises.

Table VI -4. Education and Training Activities to Meet Basic Standards of Proficiency for Selected Personnel with Billets Requiring Additional Training

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Command NBC-D officers and enlisted personnel in cooperation with the functional groups of the staff				
Assist the commander in providing policy and guidance to lower echelons in all matters pertaining to the development of an NBC-D capability.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	CBRN WOBC/EBC Annually
Plan, conduct, and monitor NBC-D training within the command.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	CBRN WOBC/EBC Annually
Evaluate the capability of lower echelons to survive an NBC attack and to continue operations in an NBC environment.	Area CBRN Defense Course	Not taught	3E9-series personnel only 20 months	CBRN WOBC/EBC Annually
Keep abreast of new TTP in NBC defense.	CALL	Not taught	3E9-series personnel only 20 months	CBRN WOBC/EBC Annually
Act in the capacity of an advisor to the commander on all matters pertaining to the NBC-D of subordinate units/formations. When augmented, be responsible for the NBCWRS.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	CBRN WOBC/EBC Annually/ As Required
Recommend employment of special NBC-D elements/units, if available.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	CBRN WOBC/EBC Annually
Operate and use automated systems for calculations and data processing where appropriate. If an automated system is not available, personnel in NBC centers must be able to perform the same tasks manually.	Area CBRN Defense Course (manual only)	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	CBRN WOBC/EBC Quarterly
Act as an advisor to the commander on all matters pertaining to cooperation in NBC-D with units/agencies of other nations.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	As available during training deployments
Unit NBC-D officers and enlisted personnel (assisted by enlisted alternates)				
Provide technical assistance to the commanders and staff on NBC-D training and operations.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	Unit Annually
Coordinate the unit's NBC-D activities.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	Unit Annually
Provide NBC-D training to achieve basic operating standards of proficiency for the unit, the individuals of the unit	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	Unit Annually
Plan and supervise NBC-D training aspects of operational training exercises and maneuvers.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	Unit Annually
Supervise preparation of unit NBC-D SOPs and adapt them to existing plans of other units as required.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	Unit Annually
Supervise operations and maintenance of NBC material.	Area CBRN Defense Course	CBR-D	3E9-series personnel only 20 months	When Deployed**
Determine by dosimetry or by calculation (as appropriate) the total dose and time of stay in and/or transit through radiological contaminated areas to avoid exceeding command exposure guidance.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months (no dosimetry training)	Unit Quarterly

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Prepare fallout prediction patterns and perform the tasks of the NBCWRS (may be assigned to meteorological, operational, and/or navigational officers).	Area CBRN Defense Course	DPOS	3E9-series personnel only 20 months	Unit Quarterly
Plan NBC reconnaissance and advise commanders on the best routes to cross or bypass an NBC contaminated area.	Area CBRN Defense Course	DPOS	3E9-series personnel only 20 months	Unit Quarterly
Plan and coordinate decontamination within the unit and advise the commander.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	Unit Quarterly
Maintain records of the unit's radiation exposure.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	Unit Quarterly
Estimate downwind hazard for chemical attacks.	Area CBRN Defense Course	DPOS	3E9-series personnel only 20 months	Unit Quarterly
Report NBC data to next higher Headquarters and perform the NBC reporting and warning tasks.	Area CBRN Defense Course	Not specifically taught (msg taught to officers in general)	3E9-series personnel only 20 months	Unit Quarterly
Evaluate individual and unit competence in NBC-D and advise the commander on the unit's ability to survive and to continue operations in an NBC environment.	Area CBRN Defense Course	CBR-D/DPOS DCA/SEDC	3E9-series personnel only 20 months	Unit Quarterly
Operate and use data processing devices and possess basic knowledge of the structure of programs used in NBC warning and reporting where appropriate.	Area CBRN Defense Course	Not taught	3E9-series personnel only 20 months	Unit Quarterly
Additionally, all NBC-D officers/NCOs				
Identify the hazards related to risks of Low Level Radiation (LLR), release other than attack (ROTA), and Toxic Industrial Materials (TIM).	Area CBRN Defense Course	Not taught	3E9-series personnel only 20 months	Currently being developed
Make contingency plans for units facing LLR, ROTA, and TIM hazards.	Area CBRN Defense Course	Not taught	3E9-series personnel only 20 months	Currently being developed
Act as an advisor to the commander on all matters pertaining to LLR, ROTA, and TIM hazards.	Area CBRN Defense Course	Not taught	3E9-series personnel only 20 months	Currently being developed

NOTE: The yellow indicates that there is a doctrine/requirement. The blocks that are yellow but have no identified school/command/education course may be gaps.

* BECC, DCA/SEDC, RPLL, and PQS apply to the Surface fleet. BECC is the initial school engineering ratings. PQS is the method used for tracking surface force shipboard education, training and qualification. Additional Naval communities, including the Naval construction battalions (SeaBees), Naval expeditionary combat commands (NECCs), aviation squadrons, and other units, conduct education and training for these skills locally at their own commands as required.

** Marine Corps equipment is maintained by contractors while in garrison.

Table VI-5. Education and Training Activities to Meet Basic Standards of Proficiency for Commanders

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Understand the principles of NBC-D.	BOLC C ³	SWO	ASBC CBRNE Defense	Trained thru exercises
Know the defense organization and the NBCDE available.	BOLC C ³	SWO	ASBC CBRNE Defense	Trained thru exercises
Assess the capabilities of the NBC-D forces under their command.	BOLC C ³	SWO	ASBC CBRNE Defense	Trained thru exercises
Assess the effects of NBC munitions on unit/formation, especially on operations to be conducted.	BOLC C ³	SWO	ASBC CBRNE Defense	Trained thru exercises
Issue orders and take measures depending on situation and mission.	BOLC C ³	SWO	ASBC CBRNE Defense	Trained thru exercises
Plan operations taking into account the NBC threat and the readiness of units for operations in an NBC environment.	BOLC C ³	SWO	ASBC CBRNE Defense	Trained thru exercises
Estimate the effects of wearing NBC IPE for an extended period of time and understand what measures can be taken to mitigate those effects on the combat effectiveness and well being of their forces.	C ³		ASBC CBRNE Defense	Trained thru exercises
Be familiar with the available medical prophylactic countermeasures.	Formal training not outlined in doctrine. After IET no further training. (This is an example of the stated Gap of no formal training in the later years of a career.)	SWO	ASBC CBRNE Defense	Trained thru exercises
Be familiar with integration of NBC training in exercises.	Formal training not outlined in doctrine. After IET no further training. (This is an example of the stated Gap of no formal training in the later years of a career.)	DCA/SEDC	ASBC CBRNE Defense	Trained thru exercises

NOTE: The yellow indicates that there is a doctrine/requirement. The blocks that are yellow but have no identified school/command/education course may be gaps.

* PQS applies to the Surface fleet. PQS is the method used for tracking surface force shipboard education, training and qualification; much of the required commander's capabilities are developed by junior officers during pursuit of the Surface Warfare Office (SWO) Qualification. Additional Naval communities, including the Naval construction battalions (SeaBees), Naval expeditionary combat commands (NECCs), aviation squadrons, and other units, conduct education and training for these skills locally at their own commands as required.

Table VI-6. Education and Training Activities to Meet Survival and Unit Basic Operating Standards

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Take immediate and correct action upon warning of an imminent NBC attack or arrival of a CB agent or radiological fallout.	BCT/BOLC Unit Annually	Unit Annually	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Determine the presence and nature of NBC hazards in the unit's area and take effective measures to mitigate, to the extent possible, the effects of an NBC attack.	AIT/IMT BNCOB BOLC ANCOB C ³	Unit Annually	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Properly use unit NBC protective equipment and supplies and maintain them in a high state of serviceability and readiness.	BCT/BOLC Unit Annually	Demonstrate at Unit Annually	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Enforce a high order of health, hygiene, and sanitation to minimize the spread of disease following a biological attack.	BCT/BOLC Unit Annually	Unit Annually	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Maintain a degree of protection appropriate to the risk while continuing to conduct the primary mission of the unit.	AIT/IMT BNCOB BOLC ANCOB	Unit Annually	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Perform necessary decon of supplies, equipment, and areas for which it is responsible in the performance of its primary duties.	BCT/BOLC Unit Annually	Unit Annually	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Delineate the areas of an NBC hazard.	Unit Annually	Unit Annually	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Delineate contaminated areas and mark them by using standard signs.	Unit Annually	Unit Annually	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Cross, bypass, or function in contaminated areas with minimum loss of efficiency, decontaminating where necessary.	Unit Annually	Not taught (may not be considered applicable for many Naval applications)	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Operate efficiently over an extended period of time (to be determined by the commander based on such factors as weather conditions and equipment specifications) with personnel in full protective equipment to include wearing the protective mask.	BCT/BOLC Unit Annually	As applicable (may not be considered applicable for collectively protected environments)	BMT/ASBC CBRNE Defense 20 months**	Unit Semi-annually
Report nuclear detonations, CB attacks, and associated hazards, hazard areas, ROTAs.	WLC Unit Annually	Unit Annually (chemical only)	BMT/ASBC CBRNE Defense 20 months**	Unit Annually
Assign NBC personnel based on standards of proficiency outlined in paragraph C-3.	C ³	Unit Annually	3E9-series personnel only 20 months	

NOTE: The yellow indicates that there is a doctrine/requirement. The blocks that are yellow but have no identified school/command/education course may be gaps.

* There is no formal surface unit training schools. Rather, each unit conducts an annual self-evaluated training scenario (chemical) to maintain unit level proficiency. Similarly, Seabees conduct an annual self-assessed training. NECCs, aviation squadrons and other units perform unit level training and self-assessments as dictated by mission.

** Through Air Force Emergency Management (EM) Program Installation Exercises.

1. Army Education and Training

Per Army regulations, the Army seeks to develop leaders and units trained to conduct operations in a variety of operating environments while engaging an adaptive enemy. “The Army’s training challenge is to optimize, synchronize, and support training in schools, training in units, and self-development to produce forces ready to respond across the full range of military operations.”⁹¹

The Army Training System focuses the Army’s training efforts on supporting training in three domains: the institutional domain, the operational domain, and the self-development domain.⁹² The domains are described in Exhibit VI-1 below.

The Army’s Three Training Domains: Institutional, Operational, and Self-Development

“The institutional training domain encompasses initial training and subsequent Professional Military Education (PME) conducted at base centers and schools that provide for Soldiers and military leaders.

The operational domain includes training conducted at multiple operational locations and during operational events, including: home station, combat training centers (CTCs), mobilization centers, during Joint training exercises, and while operationally deployed.

The self-development training domain recognizes that the Army requires continuous, lifelong learning and that structured training activities in training base schools and in operational units often will not meet every individual’s need for content or time.”

Source: US Army, AR 350-1, p. 2.

Exhibit V1-1. The Army’s Three Training Domains

a. Institutional and Unit Individual Training

U.S. Army Training and Doctrine Command (TRADOC) is the Army’s proponent for training and the leader development process. TRADOC also serves as the Army’s accrediting authority for all institutions conducting training and leader development.⁹³ The three major components of the training and leader development process are initial military training, officer education, and non-commissioned officer (NCO) training programs.

Initial entry training (IET) teaches both officers and enlisted Soldiers the tasks and supporting skills and knowledge needed to be proficient in required skills at the first

⁹¹ US Army. Headquarters. Department of the Army. *Army Regulation, AR 350-1, Army Training and Leader Development*. Washington, DC: 13 January 2006, p. 2.

⁹² Ibid., p. 3.

⁹³ Ibid., p. 38.

unit of assignment. IET includes requirements that enable Soldiers to progress to wearing Mission-Oriented Protective Posture (MOPP) Level 4 equipment for at least four consecutive hours⁹⁴ and educates all IET soldiers on the following tasks:

- Protect yourself with Mask
- Put on MOPP
- Decontaminate self and equipment
- Protect yourself with Joint Service Lightweight Integrated Suit Technology (JSLIST).

The goal of the Officer Education System (OES) is to produce a corps of leaders who have developed technical and tactical competencies, as well as leadership skills, knowledge, and experience. The different steps of the OES are summarized in Exhibit VI-2.

Officer Education System

The Basic Officer Leader Course (BOLC), Phase I, begins with pre-commissioning courses. The BOLC, Phases II and III provide officer initial entry and branch qualification training

The Captain's Career Course to provide advanced branch-specific and branch immaterial staff process training.

Officer Intermediate Level Education (ILE) consists of a common core curriculum that includes Joint PME 1 requirements and the required career field training and specialized education or qualification course.

Officer Advanced Military Studies Program provides advanced education in military arts and science for selected ILE graduates.

The U.S. Army War College (USAWC) prepares senior field grade officers to assume strategic leadership responsibilities.

Source: US Army. Office of the Commandant. US Army War College and Carlisle Barracks. *How The Army Runs*, 25th Edition, 2005-2006. Carlisle, PA: 30 September 2005, pp 347–349.

Exhibit V1-2. Army Officer Education System

The non-commissioned officers (NCOs) follow a similar education path. The NCO Education System is summarized in Exhibit VI-3.

⁹⁴ U.S. Army Training and Doctrine Command. *TRADOC Regulation 350-6, Enlisted Initial Entry Training (IET) Policies and Administration*. Fort Monroe, VA: 8 May 2007, p. 45.

Non-commissioned Officer Education System

The Warrior Leaders Course (WLC) is a branch immaterial course conducted at regional NCO academies worldwide and training battalions and provides basic leadership training. The WLC introduces soldiers to two Chemical, Biological, Radiological, and Nuclear (CBRN) tasks: 1) Submit NBC 1 Report and 2) Report CBRN Information Using NBC 4 Report.

The Basic NCO Course (BNCOC) is a branch specific course. The CBRN BNCOC provides Soldiers selected for promotion to Staff Sergeant (E6) with an opportunity to acquire the leader, technical, and tactical skills, knowledge, and experience needed to lead squad-size units.

The Advanced NCO Course (ANCOC) is a branch specific course. The CBRN ANCOC provides an opportunity for Soldiers selected for promotion to Sergeant First Class (E7) to acquire the leader, technical, and tactical skills, knowledge, and experience needed to lead platoon-size units.

The Sergeants Major Course (SMC) is the capstone of enlisted training and is branch immaterial.

Sources: U.S. Army, *How the Army Runs*, p.p. 345–346; US Army. Headquarters. Department of the Army. *Soldier's Manual of Common Tasks, Warrior Skills Level 2, 3, and 4, STP 21-24-SMCT*. Washington DC: 2 October 2006, pp. 2-2 – 2-3.

Exhibit VI-3. Army Non-Commissioned Officer Education System

Army Warrior Tasks (AWT) (Table VI-7) are fundamental combat and survival tasks which include individual weapons qualification, communications, NCB defense, and first aid tasks that all Soldiers must be trained and routinely evaluated on. They vary by skill level, but many are taught at Basic Combat Training (BCT) or One Station Unit Training (OSUT).

Table VI-7. AWT Tasks - Skill Levels 1-4

E-1 – E-4 Common Skill 1	Initial Training Location	Frequency Trained in the Unit
081-831-1044 Perform First Aid for Nerve Agent Injury	BCT/OSUT	Annual
031-503-1013 Decontaminate Yourself and Individual Equipment Using Chemical Decontaminating Kits	BCT/OSUT	Annual
031-503-1015 Protect Yourself from CBRN Injury or Contamination with MOPP Gear	BCT/OSUT	Annual
031-503-1018 React to Nuclear Hazard/Attack	BCT/OSUT	Annual
031-503-1019 React to Chemical or Biological (CB) Hazard/Attack	BCT/OSUT	Annual
031-503-1024 Replace Canister on Your M40-Series Protective Mask	BCT/OSUT	Annual
031-503-1035 Protect Yourself from CB Contamination Using Your Assigned Protective Mask	BCT/OSUT	Annual
031-503-1036 Maintain Your Assigned Protective Mask	BCT/OSUT	Annual
031-503-1037 Detect Chemical Agents Using M8 or M9 Detector Paper	BCT/OSUT	Annual
031-503-1040 Protect Yourself from CBRN Injury/Contamination with the JSLIST Chemical-Protective Ensemble	BCT/OSUT	Annual
031-503-1042 Protect Yourself from CBRN Injury/Contamination When Changing MOPP (Using JSLIST)	BCT/OSUT	Annual
E-5 Common Skill 2		
031-503-1001 Identify Chemical Agents Using an M256A1 Chemical-Agent Detector Kit	Unit	Annual
031-503-1005 Submit NBC 1 Reports	WLC	Annual
031-503-1010 Supervise the Employment of CBRN Markers	Unit	Annual
031-503-1022 Operate the AN/VDR-2 Radiac Set	Unit	Annual
031-503-1023 Protect Yourself from CBRN Injury/Contamination when Changing MOPP Gear	Unit	Semi-Annual
031-503-1027 Operate the AN/UDR-13 Radiac Set	Unit	Annual
031-503-1053 Report CBRN Information Using NBC 4 Reports	WLC	Annual
031-504-1061 Conduct a Mask Fit Test Using the M41 Protection Assessment Test System	Unit	Annual
E-6 Common Skill 3		
031-503-1002 Conduct Unmasking Procedures	Unit	Annual
031-503-1016 Implement MOPP	Unit	Annual
031-503-3004 Supervise the Crossing of a Contaminated Area	Unit	Annual
E7 – E8 Common Skill 4		
031-503-4002 Prepare a Unit for a CBRN Attack	Unit	Annual

Source: US Army. Headquarters. Department of the Army. *Soldier's Manual of Common Tasks, Warrior Skills Level 1, STP 21-1-SMCT*. Washington DC: 2 October 2006.

Additional individual and unit training is conducted at the Combat Training Centers (CTCs). The objectives of the Combat Training Center Program include increasing unit readiness; developing battlefield leaders; embedding doctrine; providing feedback on unit tactical effectiveness to participants; and providing data to improve

doctrine, organization, training, materiel, leadership and education, personnel, and facilities input to the combat and training development processes.⁹⁵ Further, the CTCs provide an area for training and exercises in a realistic combat environment.

b. Unit Training

Commanders are responsible for leader training and leader development programs in their units. The Combined Arms Training System (CATS) provides Active Army and Reserve component (RC) training managers with a descriptive, mission-oriented training program to train the unit to perform its critical wartime operations. While missions and deployment assignments impact on the priorities, the operations described in CATS are expected to be executed at a high level of proficiency. Each unit is expected to train, as a minimum, to the standards of the training and evaluation as outlined.

“Commanders develop and publish near-term, short-range, and long-range training guidance. The commanders training guidance establishes the unit’s training program and guides subordinate unit training programs.”⁹⁶ NCB defense training guidance and requirements are shown in Exhibit VI-4.

NCB Defense Training and Requirements

- (1) Unit NBC defense training will ensure that Soldiers, leaders, and units achieve and maintain proficiency in combat operations under NBC conditions. Individual Soldiers, leaders, and units will achieve and maintain the standards for NBC defense tasks.
 - (a) The NBC defense tasks, such as contamination avoidance, protection, and decontamination doctrine, will be integrated into unit mission training through the following actions:
 - (i) Commanders will analyze their missions and train to accomplish them against the NBC threat they expect to face
 - (ii) Selected field training exercises and command post exercises will include NBC operations against an operational force with a capability of employing NBC weapons
 - (iii) The External Evaluations (EXEVAL) of overall unit proficiency must in part, measure how well the unit performs in an NBC environment.
 - (b) Unit NBC weapons defense training should include every aspect of chemical warfare operations.
- (2) Civilian personnel expected to deploy with Army units will be trained to the same NBC standards as military personnel.

⁹⁵ US Army. Headquarters, Department of the Army. Army Regulation. AR 350-50, Combat Training Center Program, 24 January 2003, p. 1.

⁹⁶ US Army. AR 350-1. 13 December 2006, p. 71.

- (3) To enhance NBC defense training at the unit level, every tactical company, battery, or troop will have an NBC defense officer and NCO. The NBC NCO is the unit commander's principal NBC defense trainer and advisor on NBC defense operations and training, and NBC defense equipment maintenance.
- (a) Those Table of Distribution and Allowance units authorized NBC defense equipment are required to conduct NBC defense training and will appoint an NBC NCO.
 - (b) The unit (company, battery, or troop) NBC defense officer and NCO must successfully complete the NBC Defense course developed by the U.S. Army Chemical School (USACMLS). This course may be taken at area or post NBC schools or at Total Army School Systems Battalions.
 - (c) The NBC defense training must be fully integrated into unit exercises for both offensive and defensive operations. Realistic training requires that enemy doctrine and capabilities for the employment of NBC weapons be understood and used to enhance mission performance in an NBC environment.
 - (d) Defensive NBC warfare operations will be fully integrated into exercise situations. This integration will develop and test the capability of commanders, staffs, and units to perform their missions under extended NBC conditions. Unit's NBC proficiency will be determined by having the unit accomplish its mission under NBC conditions during external and internal evaluations to MTP standards.
 - (e) Units will conduct weapons qualification on individual and crew-served weapons with personnel wearing MOPP 4, in accordance with Department of Army (DA) Pamphlet 350-38.
 - (f) Contamination avoidance, protection, and decontamination training will be conducted as described below.
 - (g) Individuals will be trained on basic decontamination tasks using individual and unit decontamination equipment. Leaders at all levels will ensure their units are proficient in operational and thorough decontamination procedures.
 - (h) Personnel will be trained on the proper procedures for entry and exit of collective protection equipment.
 - (i) Operation and maintenance of individual and unit NBC equipment are the duties of both leaders and Soldiers.
 - (j) Operators of unit NBC defense equipment will be trained to perform operator maintenance and serviceability criteria checks on the assigned equipment.
 - (k) Emergency essential DA civilians will be trained in NBC survival skills. Emergency essential contractor personnel and local nationals of foreign host countries will be trained in accordance with applicable contracts and host nation agreements.
 - (l) Units will integrate, as appropriate, the use of smoke and flame to support mission related training.

Source: U.S. Army, AR 350-1, p. 79.

Exhibit VI-4. Army NCB Defense Training and Requirements

2. Navy Education and Training

The Navy conducts training at the individual, unit,⁹⁷ and installation level. Individual training includes formal schools, web-based training programs, and basic and advanced Chemical, Biological, Radiological, and Nuclear (CBRN) Personnel Qualification Standards (PQS) training and evaluation. At the unit and installation levels, the Navy conducts periodic NCB defense and pre-deployment exercises.⁹⁸ Although the Navy does provide specialized NCB training to some enlisted personnel and officers, the Navy does not have a specific corps of personnel who specialize in NCB. Rather, NCB responsibilities are collateral duties assigned to officers and enlisted personnel (usually shipboard engineering damage control rated, SeaBees, or others who have the Disaster Preparedness Operations Specialist (DPOS) course). The Catalogue of Naval Training Courses (CANTRAC) lists the available courses and prerequisites for training key personnel.⁹⁹

a. Institutional and Unit Individual Training

Sea Warrior is the Navy's commitment to the Sailor's professional growth and development. It combines a continuous career management, growth, and development centered perspective on the Sailor that is critical and relevant to the Navy's overall mission. The Sea Warriors philosophy includes the Apprentice, Journeyman, and Master training levels.

The Sailor Continuum or Five-Vector Model is a key component of the Sea Warrior concept, allowing sailors to track their Naval careers, meet career milestones, and take credit for their accomplishments. The model is customized to match each sailor's rating, pay grade, and accomplishments. The model breaks down the skills and knowledge that a sailor requires to be successful in five categories: professional development, personal development, military education and leadership, certifications and

⁹⁷ Most Naval communities operate in large, collective units, including ships, squadrons, and submarines. The Naval Construction Battalions (SeaBees) and the Special Operations and Special Warfare communities may operate in smaller teams.

⁹⁸ Office of the Under Secretary of Defense for Defense Acquisition, Technology, and Logistics (USD(AT&L)). *Department of Defense Chemical and Biological Defense Program, Annual Report to Congress*. Washington, DC: April 2007, p. 110.

⁹⁹ U.S. Navy. *Naval Ships' Technical Manual (NSTM) 470*. 1 November 2006, p. 470-1-5.

qualifications, and performance.¹⁰⁰ A representation of the Five-Vector Model is shown in Figure VI-1.

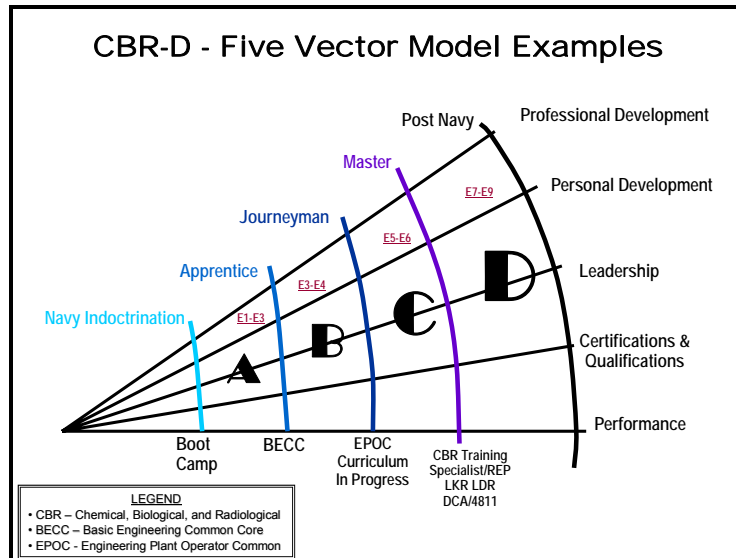


Figure VI-1. Navy Five-Vector Model

Apprentice-level training occurs during recruit and accession training. “At the recruit training center, all enlisted personnel receive three hours of training (two hours in the classroom, one hour in the lab) focused on the use of personal protection equipment and survival skills, including an exercise designed to increase individual confidence in the protective equipment. At officer candidate school, officers receive two hours of classroom training focused on personal protection equipment and survival skills.”¹⁰¹

Recruit CBR-D education begins at recruit training (boot camp). This training enables the Sailor to:¹⁰²

- Identify the purpose and characteristics of mission oriented protective posture (MOPP) levels as they apply to individual protective equipment
- Explain the procedures for donning an advanced chemical protective garment with accessories and an MCU-2/P chemical-biological mask
- Use an MCU-2/P chemical-biological mask for protection when entering a space flooded with tear gas

¹⁰⁰ JOSA Andrew Zask. Five-Vector Model: Focused on Tracking Qualifications. *Undersea Warfare: Official Magazine of the U.S. Submarine Force*. Washington, DC: Spring 2004.

¹⁰¹ USD(AT&L). CDBP Annual Report to Congress, Op. cit., p. 111.

¹⁰² Charles Lansing. Email to the authors. 16 April 2007.

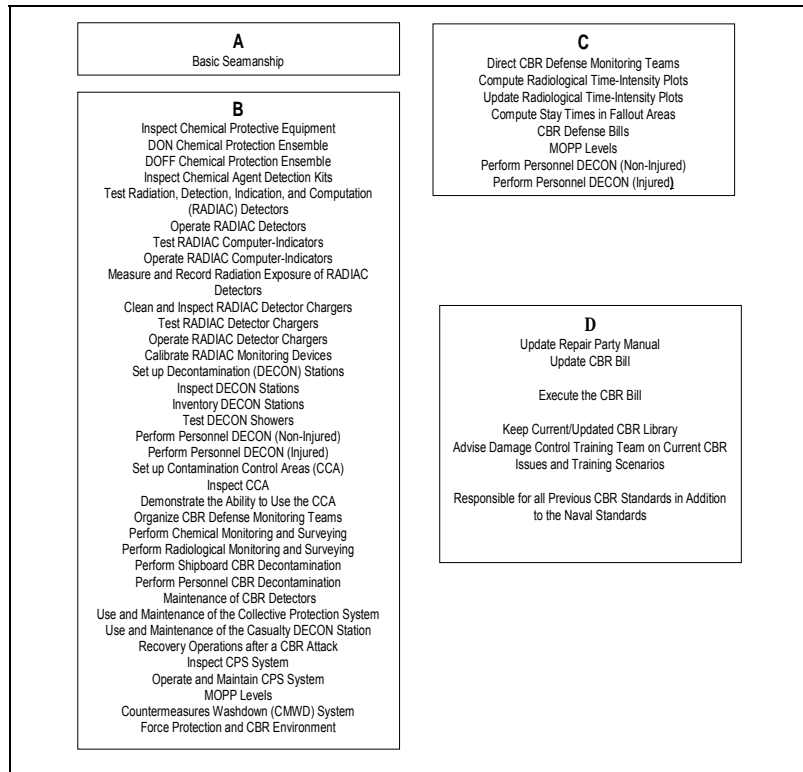
- Explain the relationship between teamwork and donning chemical-biological protective equipment
- Explain the relationship between the Navy Core Values and participating in the CBR-D laboratory
- Explain the Navy Operational Risk Management Program

The Basic Engineering Common Core (BECC) School provides introductory shipboard engineering, including damage control (DC) and fire-fighting skills, to all apprentice-level Firemen. The introduction of BECC (which replaced specialized “A” schools) increased the percentage (15–17 percent) of new Navy engineering personnel who receive the introductory training which includes NCB defense.¹⁰³

Most shipboard personnel will proceed from recruit training or BECC directly to their ships with no additional training. Once onboard ship, Additionally, each sailor receives instruction as directed in *Chief of Naval Operations Instruction (OPNAVINST) 3541.1E, Surface Ship Survivability Training Requirement*. This instruction identifies four levels of training: 1) initial, 2) advanced ship survivability and damage control, 3) ship survivability and damage control team, and 4) ship survivability management. Figure VI-2 identifies the specific NCB defense training sailors should receive during each phase of the continuum. The training is described in further detail in Exhibit VI-6. This is tracked through enrollment in the PQS program, PQS is primarily a system for validating and tracking qualifications and is used for everything from general damage control to specialized watch stations to overall warfare certifications. Under the PQS program, personnel complete self-directed study evaluated by task demonstration; there is no formal, standardized NCB training across the Navy. Rather, the level of required training is command driven—commands may offer classroom instruction, individual training, computer-based instruction or other processes. Because PQS is a shipboard program, it only reaches a limited percentage of shipboard sailors.

Additional Naval communities, including the Naval construction battalions (SeaBees), Naval expeditionary combat commands (NECCs), aviation squadrons, and other units, conduct education and training for the required skills locally at their own commands using their own processes as required.

¹⁰³ US Navy. Naval Sea Systems Command. *Strategic Approach to CBR Training*. Washington Navy Yard, DC: September 2005, p. 6.



Source: Charles Lansing, Naval Surface Warfare Center, Combat Development Systems Analysis, Dam Neck, VA. *Email to the authors*, 16 April 2007.

Figure VI-2. Navy Five Vector Training Model Cycle

Level I. Initial Training is conducted after commissioning of officers and during recruit training for enlisted personnel. This training covers basic ship survivability and damage control training. CBR-D initial training includes threat weapon effects; CBR-D and survival skills; decontamination procedures, and use of CBR gas confidence chamber.*

Level II. Advanced Ship Survivability and Damage Control Training is designed for personnel who, because of their duties, require additional survivability and damage control training. Level II includes CBR-D tasks. Personnel receiving Level II training include:**

Engineering department personnel	Vital combat systems space supervisory personnel
Flight deck duty personnel	Petroleum/Oils/Lubricant and ordnance personnel
Surface Warfare/Submarine qualified enlisted personnel	
Division/Department Damage control petty officers	

Level III. Ship Survivability and Damage Control Team Training is designed for personnel who, because of their duties, require additional ship survivability and damage control training as members of a team or battle organization repair party. Level III CBR-D training is designed to be conducted both ashore and on board ship through formal courses, drills, and exercises. These exercises include all peacetime emergencies as well as battle damage exercises corresponding to weapon threats in the expected areas of ship deployment. Level III training is completed as specified by the applicable fleet commander. At a minimum, damage control personnel will receive Level II and level III Ship Survivability Training. Personnel receiving Level III training include, but are not limited to:†

Repair Party Leaders, including combat systems repair
In-port emergency teams
Rescue and assistance teams

Level IV. Ship Survivability Management Training is designed for personnel who, because of their battle organization and administrative duties, require additional ship survivability and damage control training primarily in the areas of battle and emergency preparation and decision making; conflagration control; assessment of residual capabilities after battle damage; damage containment priorities; equipment and vital system restoration priority setting in support of maintaining or restoring warfighting capability after damage; vital systems capabilities and reconfiguration decision in support essential ship mission and damage control capabilities.††

Level IV training is designed to be conducted either ashore or on board ship through drills and exercises. Level IV training includes instruction in conflagration, threat weapons effects to the ship for areas of ship deployment and the operation, management, reconfiguration and administration of the battle organization as it impacts ship survivability. This level of training will also include instruction in inspection and battle damage investigation procedures to be employed on shipboard vital systems and in procedures to properly conduct shipboard survivability drills/training. Personnel who receive Level IV training include:†††

Commanding Officer	Executive Officer
All department heads	Damage Control Assistant
Condition II and III Combat Watch Officers and Combat System Readiness Officers	
Electrical Officer	Repair Party Leaders including combat systems repair
Gas Free Engineer	

* US Navy. Chief of Naval Operations. *OPNAVINST 3541.1E, Surface Ship Survivability Training Requirement*. 6 March 1995. p. 2.

** Ibid., p. 3.

† Ibid., p. 4.

†† Ibid.

††† Ibid., pp. 4-5.

Exhibit VI-5: Five-Vector Model Training Cycle

For those who will receive additional NCB training, Journeyman level training begins once Navy personnel are assigned to the Fleet. Assigned sailors are expected to complete Navy Knowledge Online (NKO) Web-based classes supplemented by hands-on instruction. Surface Warfare (surface-ship designated) officers and DC enlisted sailors receive additional NCB education at Fleet schools taught by Master instructors. SeaBee personnel receive Journeyman status after completing the Disaster Preparedness Operations Specialist (DPOS) course with the Center for Seabees and Facilities Engineering (CSFE) Detachment, U.S. Army Chemical School, Fort Leonard Wood, Missouri.

Two (2) courses offered at the Surface Warfare Officer School (SWOS) and Damage Control Assistant (DCA) School provides specific NCB training. The Repair Party Leader/Damage Control Short Course is a two-week Journeyman Level course that provides Line Officers with training required for assignment as a Repair Party Leader aboard a surface ship. The curriculum includes CBR-D procedures and techniques.¹⁰⁴

The DCA/Senior Enlisted Damage Controlman (SEDC) Course is a six-week course that provides training for Line Officers, Warrant Officers (W1-W3), and enlisted personnel (E6-E9). The curriculum concentrates on training required for assignment to a DCA billet aboard a surface ship. One (1) week of this training is dedicated to tasks and activities related to CBR-D aboard Navy ships.¹⁰⁵ This course includes subject matter expertise to manage the operation and maintenance of NCB defense and nuclear weapons accident/incident equipment. Enlisted graduates are awarded an NEC of 4811, and all graduates achieve the Master level of the Five-Vector Model.

There are additional courses available to achieve “Master” or “Professional” ratings for officer and enlisted personnel assigned to ship and shore billets who requiring specialized NCB defense expertise. They may also attend the DPOS Course, (26 days), or the Shipboard CBR-D Operations and Training Specialist Course (12 days) at Fort Leonard Wood, Missouri. The Fort Leonard Wood course descriptions are shown in Exhibit VI-5.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

Master Level Naval NCB Defense Courses:

The Disaster Preparedness Operations Specialist Course provides basic to advanced Masters level Disaster Preparedness Operations Specialist training for enlisted personnel (E5-E9), officers, and Foreign Nationals. In this course, students develop a Disaster Preparedness plan to include preparation, endurance and recovery from a man made or natural disaster, conduct radiation surveys, and plot chemical contamination avoidance by utilizing maps, ground positioning system and compass. Students perform in a contaminated environment utilizing various detection equipment and protective gear, and determine radiation exposure levels using tables and formulas. Students also learn personnel and equipment decontamination, basic Command Control Center operations, shelter set up and management, self-aid, buddy aid, and other topics relative to CBR warfare.* “The Navy is currently reviewing options to redesign the Disaster Preparedness Course and create two (2) new courses: an Emergency Manager Course for Navy installation personnel and an expeditionary CBR specialist course for personnel assigned to shore-based expeditionary forces.”†

The Shipboard CBR-D Operations and Training Specialist course provides basic to advanced Masters level training to Warrant Officers (W1-W3) and enlisted personnel (E5-E9) for all Navy ratings. Graduates of this course are prepared to conduct CBR-D training to unit personnel within the normal command organization and on the individual tasks/requirements necessary to prepare for, defend against, and recover from a CBR incident onboard a ship. During the course, senior enlisted damage control personnel are exposed to numerous CBR-D issues and receive a comprehensive course of instruction regarding all aspects of individual CBR-D.††

* US Navy, Naval Education and Training Command. *Catalogue of Naval Training Courses (CANTRAC), Volume II – DC-4805 Shipboard Chemical, Biological and Radiological-Defense (CBR-D) Operations and Training Specialist, Course# A-495-2062*, Pensacola, FL, <https://cantrac.training.navy.mil>.

† USD(AT&L). CBDP Annual Report to Congress, p. 112.

†† Ibid.

Exhibit VI-6. Master-Level Naval NCB Defense Courses: Disaster Preparedness Operations Specialist & Shipboard CBR-D Operations and Training Specialist

The CSFE supervises both of these programs. “The courses are open to Navy, Coast Guard, Military Sealift Command, and select foreign military personnel, E-5 and above. Courses are designed to provide both afloat and ashore commands with personnel who can successfully perform their duties in a CBR contaminated environment. In addition, the training enables CBR-D specialists to act as the primary CBR-D trainers for their respective commands.”¹⁰⁶ Personnel who graduate from the Shipboard CBR-D Operations and Training Specialist course earn a Navy Enlisted Classification (NEC) 4805, and personnel who graduate from the Disaster Preparedness Specialist course earn an NEC of 9598. Graduates of either course are then considered at the Master-level on the Five-Vector Model (Figure VI-1, above). Although many of the participants in these courses are shipboard and Seabee enlisted personnel, spaces are available for individuals

¹⁰⁶ USD(AT&L). CBDP Annual Report to Congress, Op. cit., p. 112.

from aviation squadrons,¹⁰⁷ Naval expeditionary combat commands (NECCs), and other units as required.

Additional instructor-provided or computer-assisted instruction is provided for individual pieces of NCB equipment. These courses, student completion numbers, and instructor requirements are documented in equipment-specific Navy Training System Plans (NTSPs) which are reviewed and approved for use by the manning and Fleet communities.

A number of NCB defense training opportunities are available at Navy Knowledge Online (NKO). This training is being incorporated into the PQS program and other Naval communities' training programs. Training is available to any sailor with an NKO account. After taking an online course, sailors complete an online test that they either pass or fail. This test is the only certification currently available or required for the online training. The following training courses are currently available:¹⁰⁸

- CBR and Hazardous Material Identification, Protective Equipment, and Measures
- Navy Shipboard Collective Protection System and Navy Selected Area Collective Protection System
- Shore Based Automatic Chemical Agent Detector and Alarm
- Chemical Warfare Directional Detector AN/KAS-1/1A
- Dry Filter Unit
- Improved Chemical Agent Monitor
- Improved (Chemical Agent) Point Detection System
- Joint Biological Point Detection System (is in development)
- NCB Specialist

All toxic agent NCB defense training is conducted at the Navy Construction Training Center Detachment, Fort Leonard Wood, Missouri. The detachment provides training in the detection, identification, and decontamination of toxic chemical agents, and permits personnel dressed in NCB personal protective gear to conduct operational functions during toxic chemical conditions. Although the Army operates the Chemical Defense Training Facility, the Navy has a Memorandum of Understanding with the U.S.

¹⁰⁷ Navy Manpower Analysis Center. Request Revision of Navy Enlisted Classification (NEC) Code DC-4805. *Memorandum*. Millington, TN: 9 February 2006.

¹⁰⁸ Charles Lansing, Naval Surface Warfare Center, Combat Development Systems Analysis, Dam Neck, VA. *Email to the authors*, 16 May 2007.

Army Chemical School to train naval personnel in toxic chemical warfare agent conditions in the facility.¹⁰⁹

b. Unit Training

The DC organization's responsibilities for NCB defense fall into three areas.

- Damage Control Administrative Responsibilities: Administrative CB defense functions to include fitting and issue of protective clothing and masks, providing CB defense training, and maintenance of CB defense equipment.¹¹⁰
- Damage Control Central Responsibilities: Damage Control Central manages and coordinates the activities of repair parties and watchstanders in CB defense. They are also responsible for CB hazard assessment and making recommendations to the bridge in a CB warfare environment.¹¹¹
- Repair Party Responsibilities: Personnel from repair parties are assigned to monitoring teams, decontamination teams, and decontamination station attendants.¹¹²

Navy personnel receive NCB non-medical task sustainment training when completing PQS requirements or through completion of specific formal courses or local training. Personnel must demonstrate proper procedures for donning and doffing MOPP gear, as well as personal decontamination. Additionally, throughout the unit's training cycle, afloat units perform exercises or drills in which personnel must don and perform tasks in MOPP gear.

Currently, all personnel preparing to deploy aboard ships, strike groups, air squadrons, Seabee Battalions and others participate in NCB training exercises. Exercises are validated by shipboard subject matter experts (Master), as well as those from Afloat Training Groups (ATGs), Fleet Forces Command, Norfolk, Virginia, and Type Commanders. Additionally, drills are conducted during Navy, Joint, and Coalition exercises and prior to the deployment of ships, battle groups, squadrons, and units.¹¹³

ATGs are located on the East and West Coasts, as well as overseas. During a ship's pre-deployment training cycle, the ATG conducts training assessments for NCB

¹⁰⁹ Ibid.

¹¹⁰ US Navy. *Naval Ships' Technical Manual (NSTM) 470. 1. November 2006*, pp. 1–4.

¹¹¹ Ibid., pp. 1–5.

¹¹² Ibid.

¹¹³ US Navy. Office of the Chief of Naval Operations. *Current Exercise Requirements. Navy Chem-Bio Education and Training Presentation*. Washington, DC: 5 April 2007, Slide 14.

defense training along with other training required for certification. Assessments are accomplished only at a basic level. No advanced NCB training is given beyond the drill itself.

“Initially, the ATG conducts training for the shipboard training teams, including all shipboard DC training, including the Damage Control Training Team (DCTT). The DCTT is responsible for coordinating and conducting all shipboard damage control training including CBR-D training. The shipboard training teams then conduct [the training cycle assessments]...to prepare the ship for the final evaluation period (FEP) ...leading to deployment.”¹¹⁴ The unit performs its own evaluations throughout the training cycle, while the ATG provides supplementary and oversight planning and evaluations and coordinates training support services.

Following completion of the individual unit training, the unit conducts intermediate training with its assigned deployment group (or battle group) to prepare for Composite Training Unit Exercises prior to deployment. During deployment, the unit participates in advanced training leading to fleet exercises, and conducts repetitive training to sustain operational effectiveness.¹¹⁵

The Navy relies on personnel with NCB collateral duty assignments since it does not have a NEC for nuclear, chemical, and biological operators or maintainers. The DC petty officer or Aviation Boatswain’s Mate will be tasked and trained as NCB equipment operators. Squadron maintenance personnel will be trained to perform aircraft and support equipment decontamination, while trained Seabee Battalion Contamination control and maintenance personnel perform equipment decontamination. No specific Seabee ratings are assigned or designated since positions are augmented due to availability.¹¹⁶

In addition to training cycle requirements and other drills, every deploying ship conducts quarterly NCB and countermeasure wash down training. For the year 2007-2008, to support ship operational readiness and survivability evaluations, each

¹¹⁴ US Navy. *Navy Training System Plan, N78-NTSP-A-50-0116/1, for the Joint Service Family of Decontamination Systems -- Blocks I, II, III, IV.* April 2002, p. I-15.

¹¹⁵ Ibid., p. I-15.

¹¹⁶ Ibid., p. i-ii.

operational ship at sea will activate plume generators, conducting total ship NCB System of Systems tests.¹¹⁷

3. Air Force Education and Training

The U.S. Air Force Professional Military Education programs and schools prepare junior, mid-career, and senior noncommissioned and commissioned officers and selected civilians for progressively more responsible positions throughout the Air Force.

The Air Force military training system ensures accurate, timely, relevant, and efficient training is available to every airman; active duty, guard and reserve, officer and enlisted anytime, anywhere around the world. The Air Force ensures proficiencies and currency of NCB defense training through classroom training, unit level training, and exercises. Much of this education takes place in the various rank-specific developmental education courses, as well as courses required of selected specialties. Instructors at unit level receive their professional training through Air Force courses at Fort Leonard Wood, Missouri. Supervisors train personnel to complete mission critical tasks while the Airmen are wearing their full complement of Individual Protective Equipment (IPE). Exercises are used for training and evaluation purposes.

a. Institutional and Unit Individual Training

“The Counter chemical, biological, radiological and nuclear (C-CBRN) training programs are designed to provide Airmen with the basic skills necessary to function in a CBRN environment.”¹¹⁸ Training programs are divided into three categories: accession training, operational training, and continuation/recurring training.

Accession training provides foundational C-CBRN combat skills needed to survive and operate in a CBRN environment that airmen will build upon throughout their careers. Enlisted personnel attending Basic Military Training School (BMTS) receive initial certification for NCB defense during Warrior Week Training. Officers’ accession training includes initial NCB training, and graduates receive credit for initial NCB defense training. Accession training includes basic individual defense measures and the wearing of protective equipment; alarm signals; mission-oriented protective postures; NCB characteristics, identification, detection, reporting, and decontamination; and a

¹¹⁷ US Navy, Office of the Chief of Naval Operations, Exercise/Test Requirements. *Navy Chem-Bio Education and Training Presentation*. Washington DC: 5 April 2007, Slide 13.

¹¹⁸ US Air Force. *Air Force Doctrine Document, AFDD 2-1.8, Counter-Chemical, Biological, Radiological, and Nuclear Operations*. 26 January 2007, p. 55.

mask confidence exercise. CBRNE training combines with other combat skills training culminating in a full-scale “ability to survive and operate”¹¹⁹ exercise. All other members, including emergency essential civilians and contractor personnel, that are in, or deployable to, chemical threat areas who have not completed training during their inception into the Air Force receive initial NCB defense training at respective installations.

“Operational C-CBRN training builds upon the basic skills developed in accession training and provides the necessary technical skills to ensure mission accomplishment in a CBRN environment. Formal training provides individuals with the knowledge and skills to perform their duty assignments effectively. While accession training provides the initial training, operational training offers the advanced level of training to continue operations within a CBRN environment.”¹²⁰

“Continuation/recurring training maintains and refines skills necessary for a unit to conduct their mission in a CBRN-threatened or contaminated environment ...Commanders must ensure their units are trained and able to perform in CBRN threat environments throughout the spectrum of conflict. Continuation training enables a commander to assess organizational capabilities and to maintain the unit’s ability to survive and operate in CBRN threat environments.”¹²¹ This training should provide the means to keep Air Force personnel current on changes in NCB policies and procedures. Additionally, it will prepare them for increased responsibility, including conducting training for others in the unit, leading forces, and planning NCB operations. Continuation and ancillary training normally occurs at the installation level. Available courses include the CBRNE Defense Training Course, specialized team training, and CBRNE Defense Senior Leaders Course. These courses train participants to conduct prediction, detection, identification, marking, decontamination, and health risk assessments for NCB agents.

Personnel will complete the CBRNE Defense Training Course, EOR Training Course, and Task Qualification Training (TQT) every 20 months when deploying to a medium- or high-threat area. Personnel in low-threat areas will receive all three courses via “just-in-time training” if tasked for deployment. In the event of an NCB threat-level increase, all personnel are required to complete are three courses every 20 months until

¹¹⁹ Ibid., p. 56.

¹²⁰ Ibid., p. 56.

¹²¹ Ibid., p. 55-56.

the threat level decreases.¹²² The designation of NCB threat areas is used for both deliberate and execution-level planning. Table VI-8 lists the CBRNE threat areas identified in *Air Force Instruction (AFI) 10-2501, Air Force Emergency Management (EM) Program, Planning and Operations*.

Table VI-8. Worldwide CBRNE Threat Area

CBRNE Threat Area	Geographical Location
High-Threat Area (HTA)	Bahrain, Balkans Region, Diego Garcia, Egypt, Greece, India, Israel, Jordan, Kingdom of Saudi Arabia, Kuwait, Pakistan, Qatar, Republic of China (Taiwan), Republic of Korea, Somalia, Singapore, Sudan, Thailand, Turkey, and United Arab Emirates
Medium-Threat Area (MTA)	Germany, Italy, Japan, and Yemen involvement.
Low-Threat Area (LTA)	All locations not listed as a high or medium threat area

Source: *Air Force Instruction AFI 10-2501, Air Force Emergency Management (EM) Program, Planning and Operations*. 24 January 2007, p. 44.

Initial CBRNE training occurs at the accession/entry-level training. Enlisted personnel receive training at BMTS at Lackland Air Force Base (AFB), Texas. Officers receive initial NBC training in accordance with AFI 10-2501 (Table VI-9, below). This table outlines the subsequent refresher NBC training and requires initial completion of the CBRNE Defense Course based on threat area assigned.

Aircrew members receive NCB defense education and training from several functional areas. Aircrew Life Support provides education and training on aircrew IPE and processing personnel through the aircrew contamination control area (ACCA). Flight Medicine provides training on agent toxicology and pharmacology. The Civil Engineering (CE) Readiness and Emergency Management Flight provides education and training on ground crew CBRNE operations and standards on a 20-month cycle.¹²³

Air Force Emergency Management (EM) Training

AFI 10-2501 provides the guidelines for the Air Force EM Program. “The primary missions of the Air Force EM program are to save lives; minimize the loss or degradation of resources; and continue, sustain, and restore operational capability in an all-hazards physical threat environment at Air Force installations worldwide.”¹²⁴

¹²² Ibid., p. 70.

¹²³ *Air Force Instruction AFI 10-2501, Air Force Emergency Management (EM) Program, Planning and Operations*. 24 January 2007, p. 66.

¹²⁴ Ibid., p. 7.

The Air Force EM training objective is to provide the required knowledge and skills to plan, respond to and recover from an EM event. The courses of instruction for EM are designed to meet Air Force standards of proficiency based on North Atlantic Treaty Organization (NATO) Standardization Agreement 2150, NATO Standards of Proficiency for NBC Defense, and Air Standardization Coordinating Committee Air Standard 84/8, Initial, Continuation and Unit NBC Standards.

Table VI-9. Air Force Emergency Management Program Education and Training Courses

Course	Audience	Recurring Frequency (in months)			Classroom or Demonstration- Performance Duration ¹ (in hours)
		LTA	MTA	HTA	
CBRNE Defense ^{2,3}	See section 4.5, Air Force EM Training Policy	20	20	20	8 (initial)/4 (refresher)
CBRNE Defense Functional Area TQT ^{2,4,5}	See section 4.7, CBRNE Defense TQT Standards	20	20	20	Determined by Supv. or AFCFM
CBRNE Defense Key Leaders ²	Installation and Group Commanders, ICC and EOC members, other key personnel identified by Air Force Career Field Manager (AFCFM)	20	20	20	1
Explosive Ordnance Reconnaissance (EOR)	See section 4.5, Air Force EM Training Policy	20	20	20	N/A
Contamination Control Area (CCA) Management and Operations ²	Members appointed by Unit Commander	20	20	20	4
Post-Attack Reconnaissance (PAR) Team ²	Members appointed by Unit Commander	20	20	20	2
Command and control (C2) Center Operations ²	Members appointed by Unit Commander	20	20	20	2
Emergency Response Operations (ERO) ²	All DRF members assigned those functions listed in paragraph 2.4.2, AFI 10-2501	20	20	20	2
Readiness Support Team (RST) ²	Members appointed by Unit Commander	20	20	20	16
Shelter Management Team (SMT) ²	Members appointed by Unit Commander	20 ⁶	20	20	4
Contamination Control Team (CCT) ²	Members appointed by Unit Commander	N/A ⁷	20	20	4
Exercise Evaluation Team (EET) ^{2,8}	Members appointed by Unit Commander	20	20	20	2
Unit EM Program Representative ²	Members appointed by Unit Commander	12 ⁹	12 ⁹	12 ⁹	2
BEPO ²	All Personnel	N/A ¹⁰	N/A ¹⁰	N/A ¹⁰	1/2

Source: *Air Force Instruction AFI 10-2501*, p. 68.

Notes:

1. Duration approximate, based on Air force objectives, local procedures, and requirements. It is affected by student proficiency levels.
2. Complete training within 60 days after appointment or arrival.
3. Must be current in CBRNE Defense training when making a permanent change of station to a MTA or HTA. Complete theater-specific training within 30 days after arrival.
4. Supervisors will train and evaluate individual demonstration-performance objectives.

5. Individual knowledge-based objectives are web-delivered. Demonstration -performance objectives are evaluated by unit trainers and supervisors. Course ensures personnel can perform critical wartime tasks wearing full IPE.
6. LTA installations only educate and train when threat posture increases, except teaching natural disaster topics for natural disaster SMT members.
7. LTA installations only educate and train when threat posture increases.
8. EET Chief may educate and train as a coordinated effort with CE Readiness. Supplemented by other course and instructors in the specific areas the members evaluate.
9. Members participate in their unit annual SAV in lieu of recurring training requirements.
10. Members receive information on the local threats at least quarterly through their unit EM program representative.

In addition to the training already mentioned, this program provides recurring NCB defense training to military personnel and emergency essential civilians every 20 months. Training courses include:

- CBRNE Defense Key Leaders Course
- Joint Senior Leaders Course
- Explosive Ordnance Reconnaissance Course
- Contamination Control Area Management and Operations Course
- Unit Control Center Operations Course
- Emergency Response Operations Course
- Readiness Support Team Course
- Shelter Management Team Course
- Contamination Control Team Course

The Air Force CE Readiness School conducts the apprentice and advanced training courses. The apprentice course is the initial training for Emergency Management personnel and teaches response and recovery requirements for major accidents and natural disasters and NCB operations including detection and decontamination, plotting and reporting procedures for NCB hazards. The advanced course teaches basic knowledge and skills required to perform NCB attack plotting, warning and reporting, and assessment of NCB hazards; as well as evaluating incapacitation and lethal levels and predicting the duration of associated hazards.¹²⁵

The Air Force Career Field Education and Training Plan describes the four skill level progression plan for Emergency Management personnel and identifies the course requirements. These requirements are summarized in Exhibit VI-7.

¹²⁵ SMSgt Samuel Hazzard. "USAF CBRN Training" [PowerPoint Presentation presented at the Education and Training Integration Conference (ETIC), Shirlington, VA: 25-27 April 2007].

Air Force Emergency Management Field Education and Training Plan

3-Skill Level: Readiness Apprentice Course. Formal training is accomplished at Fort Leonard Wood, Missouri.

5-Skill Level: Readiness Journeyman Course. This correspondence course teaches topics such as planning management, equipment, contingency and pre-expeditionary operations, as well as wartime operations.

7-Skill Level: Readiness Craftsman Course. Conducted at Fort Leonard Wood, this formal and upgrade training for Emergency Management personnel teaches advanced technical skills and management tools necessary for mid-level management positions.

9-Skill Level: Although no 9-skill level training exists, completion of the Civil Engineer Superintendent Course at Wright Patterson AFB, Ohio is required.

Source: U.S. Air Force. *AFSC 3E9X1 Readiness, Career Field Education and Training Plan -- CFETP 3E9X1 Parts I and II*. January 2006.

Exhibit VI-7. Four Skill Progression Levels for Air Force Emergency Management Personnel

Other courses available to facilitate Emergency Managers' professional growth include:

- CBRN Warning and Reporting Course
- Radiological Emergency Team Operations Course held at Kirtland AFB, New Mexico
- Civil Support Team Training
- U.S. Air Force Europe Strike Team Course
- Mission Essential Equipment Training offered at various locations worldwide.

Other relevant courses are available to all airmen as well.¹²⁶

- CBRNE Awareness Course – a distributed learning course that focuses on CBRNE defense hazards and protective actions, and provides the skills to identify CBRNE threats, threat mitigation tactics, post-attack reconnaissance, and explosive ordnance reconnaissance procedures. Air Force personnel are required to take this course once every 20 months.
- Survival Skills Course – an instructor-led course given every 20 months to deployable personnel. This course provides in-depth knowledge of CBRNE defense hazards and protective actions. It supplements knowledge obtained during the CBRNE Awareness Course.
- Key Leaders Course – is offered to Air Force installation and group commanders, personnel assigned to the Installation Operations Center or the Emergency

¹²⁶ Ibid.

Operations Center, and senior NCOs and other key personnel identified by their career field Functional Area Managers. Required within 60 days after appointment or arrival and every 20 months thereafter, this course increases understanding of requirements for conducting and sustaining operations in a CBRNE environment, and explains how new TTP support the Air Force mission by enhancing force protection, airbase survivability and operations.

b. Unit Training

Units are responsible for conducting common-core contingency-skills training to ensure personnel are ready to deploy worldwide and function in a high-threat environment. These generalized skills are found in the *Air Force Manual (AFMAN) 10-100, Airman's Manual*. Individual/Team/Crew skills are the specific tactics, techniques, and procedures (TTPs) that individuals, teams or crews must perform as specified in *AFMAN 10-2602, Nuclear, Biological, Chemical, and Conventional (NBCC) Defense Operations and Standards*. Participating in proficiency training will enable personnel to perform their wartime tasks in a CBRNE environment.

NCB defense Task Qualification Training (TQT), conducted after NCB classroom training, is training in which individuals perform wartime mission-essential tasks in a simulated wartime environment while wearing full ground crew or air crew IPE. These TQT standards are designed to ensure individuals and teams can perform mission-essential tasks in an NCB environment. Commanders have the responsibility to ensure unit personnel are task-trained using the general and functional NCB defense TTPs as identified in *AFMAN 10-2602*. Personnel must demonstrate their capability to perform wartime tasks. Units will document the tasks performed for record. This training combines specific Air Force Specialty (AFS) knowledge-based tasks with demonstration-performance tasks.¹²⁷ At the lowest level, individuals learn to apply common core CBRNE defense skills and tasks while wearing IPE.

“Active duty military, civilian, or contract personnel are required to complete the it [the TQT] within 60 days after completing the CBRNE Defense course, then every 20 months as determined by their respective Career Field Managers. ARC [Air Reserve component] personnel must complete it within four Unit Training Activities (UTA) after completing the CBRNE Defense course. Conduct all or part of the training during exercises scheduled within the 60 days or four (4) UTAs.”¹²⁸ Supervisors train and

¹²⁷ *Air Force Instruction (AFI) 10-2501*. p. 72.

¹²⁸ *Ibid.*

evaluate individual demonstration-performance objectives, while individual knowledge-based objectives are online. Demonstration-performance objectives are evaluated by unit trainers and supervisors.

4. Marine Corps Education and Training

The USMC Training and Education System is defined in *Marine Corps Order (MCO) 1553.1B, The Marine Corps Training and Education System*. The purpose of the MCO is to establish a Total Force system for training and education in the USMC and to delineate responsibilities for the implementation of that system. “This Order applies to all training and education conducted by all Fleet Marine Force units, supporting establishment units, training centers, and formal schools; and within formal courses of instruction taken by Marines at schools managed by other military Services.”¹²⁹

“Training standards constitute the basis for training instruction in all Marine Corps formal schools and Marine Corps units. Educational objectives constitute the basis for PME instruction in Marine Corps PME institutions.”¹³⁰ The USMC has a structured PME process at the warrant officer, officer, and enlisted levels.

a. Institutional and Unit Individual Training

NCB defense training for the U.S. Marine Corps (USMC) is identical for all personnel at the officer and enlisted entry levels. At recruit training and The Basic School (TBS), Marines are introduced to the field protective mask and the gas chamber. After recruit training, enlisted Marines proceed to the School of Infantry, which reinforces and expands on the basic Marine combat skills learned in recruit training. The training focus is surviving under NCB conditions.

Marine Corps Common Skills (MCCS) Program

According to *MCO 1510.121A, Marine Corps Common Skills (MCCS) Program*, the MCCS program is a system of Individual Training Standards (ITS) directives that provide progressive, building block skills expected of all Marines—enlisted personnel and officers alike—throughout the progression of their careers.¹³¹

¹²⁹ US Marine Corps. Commandant of the Marine Corps. *Marine Corps Order, MCO 1553.1B, The Marine Corps Training and Education System*. 24 May 1991, p. 1.

¹³⁰ *Ibid.* p. 3.

¹³¹ US Marine Corps. Commandant of the Marine Corps. *Marine Corps Order, MCO 1510.121A, Marine Corps Common Skills (MCCS) Program*. 1 October 2004, p. 1.

The MCCA directives annotate those common skills aligned to specific grades. “The MCCA provides a foundation upon which unit commanders, formal schools, and Distance Learning (DL) developers build training packages for individual Marines as part of unit training, formal courses of instruction, and continuing education.”¹³²

The ITS contained in *MCO 1510.89B, Individual Training Standards (ITS) System for Marine Corps Common Skills (MCCA), Volume 1*, and *MCO 1510.90A, Individual Training Standards (ITS) System for Marine Corps Common Skills (MCCA), Volume II – Corporal Through Captain*, represent those common entry-level and sustainment level skills required of all Marines. There are three levels of MCCA.¹³³

- Entry-Level Training (ELT) – teaches the skills that are common to all Marines regardless of rank.
- Sustainment Training – comprises annual training and evaluation to reinforce and sustain skills common to all Marines regardless of rank. Methods include practical application of MCCA training, skills-based performance evaluation, and the General Military Skills (GMS) test.
- Continuing Education – comprises the training and education conducted in various formal schools supported by Education Command. The focus of continuing education is to develop an understanding of the application of knowledge-based tasks. Additionally, on-the-job training and correspondence courses/distance learning provide a means to conduct continuing education.

NBC Defense Individual Training Standard

The tasks outlined in the Duty Area 20 Individual Training Standard (ITS) establish the training requirements for all Marines in the same occupational field, MOS, or position.¹³⁴ Duty Area 20 applies to the NCB defense common skills and lists the foundational tasks—survival and basic operating actions—which unit commander and education and training developers use when building “training packages for individual Marines as part of unit training plans or formal courses of instruction.”¹³⁵ Survival standards are those that the individual must master in order to survive NCB attacks. Basic operating standards are those that the individual must master in order to contribute to the

¹³² Ibid., p. 1.

¹³³ U.S. Marine Corps. Commandant of the Marine Corps. *Marine Corps Order MCO 1510.89B Individual Training Standards (ITS) System for Marine Corps Common Skills (MCCA) -- Volume 1*. October 2004, p. 2.

¹³⁴ Ibid., p. 1.

¹³⁵ Ibid., p. 1.

continued operations of the unit as a whole under NCB conditions.¹³⁶ Table VI-10 provides the tasks CBRN common defense tasks required for privates, and Table VI-11 provides the tasks required for Corporal through Captain.

Table VI-10. DUTY AREA 20 – CBRN-D Individual Marine Corps Common Skills (IMCCS)

Task	Title	Core	FLC	SUS	REQ By
MCCS.20.01	IDENTIFY NATO NBC MARKERS	X	X	12	Pvt
MCCS.20.02	MAINTAIN THE M-40 FIELD PROTECTIVE MASK	X	X	12	Pvt
MCCS.20.03	DON THE M40 FIELD PROTECTIVE MASK	X	X	12	Pvt
MCCS.20.04	DON INDIVIDUAL PROTECTIVE CLOTHING TO MOPP 4	X	X	12	Pvt
MCCS.20.05	PERFORM BASIC FUNCTIONS WHILE IN MOPP 4	X	X	12	Pvt
MCCS.20.06	PERFORM NBC DETECTION MEASURES	X	X	12	Pvt
MCCS.20.07	DECONTAMINATE SKIN AND PERSONAL EQUIPMENT	X	X	12	Pvt
MCCS.20.08	EXCHANGE MOPP GEAR	X	X	12	Pvt
MCCS.20.09	REACT TO A NUCLEAR ATTACK	X	X	12	Pvt
MCCS.20.10	REACT TO A CHEMICAL OR BIOLOGICAL ATTACK	X	X	12	Pvt
MCCS.20.11	TREAT A CHEMICAL AGENT CASUALTY	X	X	12	Pvt
MCCS.20.12	COMPLY WITH DEPLETED URANIUM (DU) SAFETY PROCEDURES	X	X	12	Pvt

Source: Marine Corps Order MCO 1510.89B, p. 6)

Table VI-11. DUTY AREA 20 – CBRN DEFENSE IMCCS: Corporal through Captain

Task	Title	Core	FLC	SUS	REQ By
MCCS.20.13	SUBMIT A NBC-1 REPORT	X		12	Cpl
MCCS.20.14	IMPLEMENT MISSION ORIENTATED PROTECTIVE POSTURE	X		12	Cpl
MCCS.20.15	PREPARE A NBC-4 REPORT	X		12	Sgt
MCCS.20.16	SUPERVISE THE IMPLEMENTATION OF MOPP	X		12	Sgt
MCCS.20.17	SUPERVISE MOPP GEAR EXCHANGE	X		12	Sgt
MCCS.20.17	SUPERVISE DECONTAMINATION OF WEAPONS AND EQUIPMENT	X		12	Sgt
MCCS.20.19	CONTROL THE SPREAD OF CONTAMINATION	X		12	Sgt
MCCS.20.20	MINIMIZE THE ADVERSE EFFECTS OF WEARING MOPP GEAR	X		12	Sgt
MCCS.20.21	SUPERVISE UNIT UNMASKING PROCEDURES	X		12	SSgt
MCCS.20.22	SUPERVISE THE CONDUCT OF MASK CONFIDENCE EXERCISE	X		12	SSgt
MCCS.20.23	EXECUTE PROTECTIVE MEASURES FOR A NUCLEAR ATTACK	X		12	SSgt
MCCS.20.24	EXECUTE PROTECTIVE MEASURES FOR A CHEMICAL OR BIOLOGICAL ATTACK	X		12	SSgt
MCCS.20.25	OPERATE IN AN NBC ENVIRONMENT	X		12	2ndLt

Source: Marine Corps Order, MCO 1510.90A, p. 11.

Table code definitions:

TASK. ITS Designator. This is the permanent designator assigned to the task when it is created.

TITLE. ITS Task Title.

CORE. An "X" appears in this column when the task is designated as a "Core" task required to "make" a Marine and qualify that Marine for the appropriate MOS. The absence of an "X" indicates that this is an advanced ("Core Plus") task that is mission, grade, or billet specific.

FLC. Functional Learning Center. An "X" appears in this column when the FLC is designated as the initial training setting. The absence of an "X" indicates that the initial training is accomplished through Managed On-The-Job Training (MOJT).

¹³⁶ U.S. Marine Corps, Commandant of the Marine Corps. *Marine Corps Order MCO 3400.3F, Nuclear, Biological, and Chemical Defense (NBCD) Training*. 1 March 2004, p. 1.

SUS. Sustainment Training Period. An entry in this column represents the number of months between evaluations or retraining by the unit to maintain the proficiency required by the standard, provided the task supports the unit's METL.

REQ BY. Required By. An entry in this column depicts the lowest grade required to demonstrate proficiency in this task.

CBRN Defense Individual Training in the Unit

In the USMC, “NCB training is a command responsibility. Commanders ensure that every Marine receives thorough, well-integrated NCB training in order to protect himself, fellow Marines, and equipment.”¹³⁷ To the USMC, “adding an NCB Specialist to a unit does not ensure the safety of an entire unit during an NCB attack or increase a unit’s NCB standards or proficiency level...the only way to achieve NCB proficiency and maintain NCB standards is to conduct a comprehensive training program that addresses the individual Marine.”¹³⁸ According to USMC doctrine, the success of this program relies on active support by the unit commander.

All Marines receive Individual Survival Standards (ISS) training annually, in accordance with the standards of proficiency outlined in *MCO 3400.3F, Nuclear, Chemical, and Biological Defense (NBCD) Training*. In conjunction with ISS training, all Marines complete an IPE confidence exercise once per calendar year.¹³⁹

b. Unit Training

Units must be able to perform to the basic operating standards of proficiency and NCB defense team operations when conducting missions under NCB conditions. These standards are outlined in *MCO 3400.3F*. The Marines consider NCB training to be an integral part of the training plan and are encouraged to train under NCB conditions whenever possible. However, *MCO P3500.72A, Marine Corps Ground Training and Readiness Program*, gives commanders the latitude to exercise discretion when determining the level of NCB readiness required to accomplish their mission, and therefore the amount of training prior to the mission.¹⁴⁰

¹³⁷ US Marine Corps. *Marine Corps Warfighting Publication, MCWP 3-37, MAGTF Nuclear, Biological, and Chemical Defense Operations*. Quantico, VA: 21 September 1998, p. 5-1.

¹³⁸ Ibid., p. 5-2.

¹³⁹ US Marine Corps. Commandant of the Marine Corps. *Marine Corps Order, MCO 3400.3F, Nuclear, Biological, and Chemical Defense (NBCD) Training*. 1 March 2004, p. 3.

¹⁴⁰ US Marine Corps. Commandant of the Marine Corps. *Marine Corps Order, MCO P3500.72A, Marine Corps Ground Training and Readiness (T&R) Program*. 18 April 2005, p. 1-5.

“The unit's training program emphasizes qualifications and the overall combat readiness of the unit. Individual training and readiness events are the building blocks for overall unit readiness.”¹⁴¹ Reliance upon NCB defense personnel, adherence to training policies, and use of the training and readiness manual, *MCO 3500.70*, constitutes a solid foundation for unit NCB defense training.¹⁴²

Marines include NCB defense activity to the degree feasible, during collective training in order to achieve standards of unit proficiency required to accomplish wartime missions. Company commanders organize and train NCB defense team(s) and other NCB personnel according to unit Standard Operating Procedures (SOPs) and directives issued from higher headquarters.¹⁴³ To ensure that individuals and units are prepared for NCB defense, commands must conduct periodic inspections. Based on guidance in *MCO 3400.3F*, inspections are field oriented and tailored to determine a unit's overall readiness capability.¹⁴⁴

“NBC platoon elements are required to conduct quarterly NBC drills. To enhance the instructional value of the drills, unit NBC officers plan and rehearse defensive operations with key staff members/small unit leaders. This training includes a practice NBC alert warning, issue or simulated issue of individual protective NBC equipment, formation and assembly of NBC teams, and assembly of unit personnel in pre-assigned or hasty shelter areas.”¹⁴⁵

“The USMC Air Ground Combat Center/ Marine Air Ground Task Force Training Command 29 Palms, California, is a Combat Training Center (CTC) that conducts relevant live-fire combined arms training, urban operations, and Joint/Coalition level integration training that promotes operational forces readiness.”¹⁴⁶ The CTC provides a unique opportunity for units to perform advanced training under conditions that approximate actual combat, thereby enabling units to assess and build upon skills

¹⁴¹ US Marine Corps, Commandant of the Marine Corps. *Marine Corps Order, MCO 3500.70, Nuclear, Biological, and Chemical Defense Training and Readiness Manual*. 20 September 2004, p. 1-10.

¹⁴² *Ibid.*, p. 1-10.

¹⁴³ US Marine Corps. *MCO 3400.3F*. March 2004. *Op. cit.*, p. 4.

¹⁴⁴ *Ibid.*, p. 3.

¹⁴⁵ US Marine Corps. *MCWP 3-37*. September 1998. *Op. cit.*, p. 5-7.

¹⁴⁶ US Marine Corps. Marine Corps Air Ground Combat Center. <http://www.29palms.usmc.mil/>.

learned at home stations. The CTC at 29 Palms is “a premier location to enhance Marine training through the use of an NBC battle scenario.”¹⁴⁷

B. NCB SPECIALIST (NON-MEDICAL) – EDUCATION AND TRAINING ACTIVITIES

In addition to the basic skills and proficiencies that every Service member must develop, NCB Specialists (non-medical) must develop additional skills and capabilities as well as the ability to conduct education and training for others. To facilitate these extra NCB-related responsibilities, NCB Specialists (non-medical) receive additional education and training, both in academic settings and at their units for sustainment. Tables VI-12 through VI-17 outline the NCB Specialist (non-medical) NCB defense training requirements for all Service members and indicate both where each task is taught and how frequently refresher training or evaluation is required, if applicable.

¹⁴⁷ Ibid.

Acronyms Defined for Table VI-12 through VI-17

3E9	Air Force Specialty – Readiness, Emergency (Consequence) Management	LTA	Low Threat Area
AIT	Advanced Individual Training	MCT	Marine Combat Training
ANCOC	Advanced Non-Commissioned Officers Course	MTA	Medium Threat Area
ASBC	Air & Space Basic Course	NBC	Nuclear, Biological, and Chemical
BCT	Basic Combat Training	NBC-D	Nuclear, Biological, and Chemical Defense
BECC	Basic Engineering Common Core	NBCDE	Nuclear, Biological and Chemical Defense Equipment
BNCOC	Basic Non-Commissioned Officers Course	NBCWRS	NCB Warning and Reporting System
BOLC	Basic Officers Leader Course	NCO	Non Commissioned Officer
C ³	Chemical, Biological, Radiological and Nuclear Captain’s Career Course	OCS	Officer Candidate School
CALL	Center for Army Lessons Learned	PQS	Personnel Qualifications Standards
CB	Chemical and Biological	ROTA	Release Other Than Attack
CBRN	Chemical, Biological, Radiological, and Nuclear	RTC	Recruit Training Command
CCA	Contamination Control Area	SOP	Standard Operating Procedure
CP	Collective Protection	TBS	The Basic School (US Marine Corps)
EBC	Echelons below Corps	TIM	Toxic Industrial Material
HTA	High Threat Area	TQT	Task Qualification Training
IET	Initial Entry Training	TTPs	Tactics, Techniques, and Procedures
IMT	Initial Military Training	WLC	Warrior Leaders Course
IPE	Individual Protective Equipment	WOBC	Warrant Officer Basic Course
LLR	Low Level Radiation		

**Table VI-12. Education and Training Activities to Meet NCB Specialist (non-medical)
Individual Standards of Proficiency**

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Individual Protection				
Individuals should normally receive initial NBC-D training upon entering military service and receive refresher training at regular intervals thereafter.	BCT/BOLC Unit Annually		BMT/ EM Apprentice Course	CBRN Basic Course/Warrant Officer Basic Course (WOBC)
Individual Survival Standards				
Recognize attacks with NBC munitions and take protective action.	BCT/BOLC BNCOC Unit Annually		BMT/ EM Apprentice Course/EM Craftsman Course Unit	CBRN Basic Course/WOBC
Recognize NBC alarms and signals.	BCT/BOLC BNCOC Unit Annually		BMT/ EM Apprentice Course	CBRN Basic Course/WOBC
Recognize the existence of CBRN hazards and take protective action.	BCT/BOLC BNCOC Unit Annually		BMT/ EM Apprentice Course Unit	CBRN Basic Course/WOBC
Properly don, seat, clear, and check the respirator/protective mask.	BCT/BOLC BNCOC Unit Annually		BMT/ EM Apprentice Course/EM Craftsman Course Unit	CBRN Basic Course/WOBC
Properly don protective clothing. The individual must be able to relate the use of protective clothing to the graduated levels of the NBC threat.	BCT/BOLC BNCOC Unit Semi-Annually		BMT/ EM Apprentice Course Unit	CBRN Basic Course/WOBC
Take protective measures against thermal radiation (light, flash, and heat), a blast wave, and radiation effects of nuclear explosions.	BCT/BOLC BNCOC Unit Annually		BMT/ EM Apprentice Course Unit	CBRN Basic Course/WOBC
Carry out immediate individual decontamination.	BCT/BOLC BNCOC Unit Annually		BMT/ EM Apprentice Course Unit	CBRN Basic Course/WOBC
Follow the procedures for the removal of NBC individual protective equipment.	BCT/BOLC BNCOC Unit Semi-Annually		BMT/ EM Apprentice Course Unit	CBRN Basic Course/WOBC
Recognize if casualties are contaminated and perform first aid (self- & buddy-aid).	BCT/BOLC Unit Annually		BMT/ EM Apprentice Course Unit	CBRN Basic Course/WOBC
Practice good personal health and hygiene as a protective measure against the spread of disease.	BCT/ BOLC BNCOC Unit Annually		Unit	CBRN Basic Course/WOBC

NOTE: The yellow indicates that there is a doctrine/requirement. The blocks that are yellow but have no identified school/command/education course may be gaps.

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables VI-1 through VI-6.

** The Air Force Bioenvironmental Engineering (BE) community as the Air Force's health risk assessment NCB specialists is responsible for similar skills and capabilities as the Air Force EM community. They develop these skills and capabilities in the BE Apprentice, BE Officer, and the Medical Nuclear, Biological, Chemical Operations and other courses at Brooks City-Base and continue training in their units.

**Table VI-13. Education and Training Activities to Meet NCB Specialist (non-medical)
Individual Basic Operating Standards of Proficiency**

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Maintain NBC individual protective equipment (IPE) in a high state of serviceability at all times.	BCT/BOLC BNCOC Unit Annually		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Be proficient in taking specific actions required for maintaining operating efficiency before, during, and after NBC attacks in order to reduce the effects of NBC weapons.	BCT/BOLC/ AIT/IMT BNCOC		EM Apprentice Course/EM Craftsman Course Unit	CBRN Basic Course/WOBC
Recognize or detect NBC agent contamination and perform immediate decontamination of self, clothing, personal equipment, individual weapon, vehicle, and crew-served weapon.	BCT/BOLC BNCOC Unit Annually		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Recognize all standard marking signs that indicate chemical, biological, or radiological contaminated areas.	BNCOC Unit Annually		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Cross or bypass marked NBC contaminated areas with minimum danger to self.	BNCOC Unit Annually		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Demonstrate proficiency in performing primary military duty—to include the use of crew/personal weapon(s)—while in the individual protective equipment for extended periods.	Unit Semi Annually		BMT/ EM Apprentice Course/EM Craftsman Course Unit	CBRN Basic Course/WOBC
Be familiar with the procedures to be followed at the decontamination facilities of military service.	Unit		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Be familiar with the principles of Collective Protection (CP), including entry and exit from CCAs and shelter organization and operation where applicable.	Unit		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Demonstrate familiarity with the use of dosimetry devices and CB detection and monitoring equipment where applicable.	Unit Annually		EM Apprentice Course* Unit* *no dosimetry training	CBRN Basic Course/WOBC
Demonstrate the ability to perform the duties of an NBC observer.	WLC Unit Annually		EM Apprentice Course Unit	CBRN Basic Course/WOBC

NOTE: The yellow indicates that there is a doctrine/requirement. The blocks that are yellow but have no identified school/command/education course may be gaps.

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Table VI-14. Education and Training Activities to Meet NCB Specialist (non-medical) Basic Standards of Proficiency for Selected Personnel Requiring Additional Training

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Personnel trained in NBC monitoring, survey, and reconnaissance				
Operate and maintain NBC equipment applicable to the task.	AIT/BOLC BNCOC Unit Annually		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Recognize attacks with NBC munitions and fully understand unit procedures for implementing warnings and providing protection.	AIT/BOLC BNCOC		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Detect and identify contamination and organize and conduct NBC monitoring and survey operations.	AIT /BOLC BNCOC NBC Recon BIDS JBPDS		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Monitor personnel, food, drinking water, and equipment for NBC contamination and effectiveness of decontamination measures.	AIT/ BOLC BNCOC		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Collect samples of suspected biological contamination and forward them as directed.	AIT BNCOC ANCOC NBC Recon BIDS JBPDS		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Collect samples of liquid or solid chemical agents.	AIT /BOLC BNCOC ANCOC NBC Recon		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Mark NBC contaminated areas, equipment, supplies, and stores with standard marking signs.	AIT NBC Recon BIDS JBPDS Unit Annually		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Provide data for compilation of NBC reports.	AIT/BOLC BNCOC C ³		EM Apprentice Course/EM Craftsman Course Unit	CBRN Basic Course/WOBC
Organize and conduct NBC monitoring and surveying operations.	AIT /BOLC BNCOC NBC Recon BIDS JBPDS		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Operate detection and survey equipment for recognizing and detecting hazards from CBRN releases.	AIT NBC Recon BIDS JBPDS		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Personnel trained in contamination control				
Perform necessary decontamination of supplies, equipment, and areas for which they are responsible in the performance of their primary duties.	AIT/BOLC BNCOC Unit		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Operate and maintain assigned decontamination equipment.	AIT/BOLC		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Establish and operate a personnel decontamination station where applicable.	AIT/BOLC BNCOC		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Take measures before an attack to prevent contamination and after an attack to avoid the spread of contamination.	AIT/BOLC Unit Annually		EM Apprentice Course Unit	CBRN Basic Course/WOBC

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Officers and NCOs			No EM CBRN-D Officers	
Deployment of NBC observers and detection devices.	BOLC/BNCOC ANCOC C ³ NBC Recon BIDS JBPDS		EM Apprentice Course Unit	WOBC
NBC monitoring, survey, and reconnaissance.	BOLC/BNCOC ANCOC C ³ NBC Recon BIDS JBPDS		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Survival procedures before, during, and after an NBC attack or <i>friendly</i> nuclear strike.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	WOBC
CBRN downwind hazards.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Radiation dose control, exposure rules, and record keeping.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	WOBC
General protective values of material against radiation, including the selection of buildings and the construction of shelters.	AIT/BOLC BNCOC C ³		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Contamination control procedures for the permanent or temporary prevention, reduction, or neutralization of contamination for maintaining or strengthening an efficient conduct of operations.	C ³		EM Apprentice Course Unit	CBRN Basic Course/WOBC

NOTE: The yellow indicates that there is a doctrine/requirement. The blocks that are yellow but have no identified school/command/education course may be gaps.

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** The Air Force Bioenvironmental Engineering (BE) community as the Air Force's health risk assessment NCB specialists is responsible for similar skills and capabilities as the Air Force EM community. They develop these skills and capabilities in the BE Apprentice, BE Officer, and the Medical Nuclear, Biological, Chemical Operations and other courses at Brooks City-Base and continue training in their units.

Table VI-15. Education and Training Activities to Meet NBC Specialist (non-medical) Basic Standards of Proficiency for Selected Personnel with Billets Requiring Additional Training

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Command NBC-D officers and enlisted personnel in cooperation with the functional groups of the staff			No NBC-D Officers	
Assist the commander in providing policy and guidance to lower echelons in all matters pertaining to the development of an NBC-D capability.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Plan, conduct, and monitor NBC-D training within the command.	AIT/BOLC BNCOC		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Evaluate the capability of lower echelons to survive an NBC attack and to continue operations in an NBC environment.	ANCOC C ³		EM Apprentice Course Unit	WOBC
Keep abreast of new TTP in NBC defense.	CALL		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Act in the capacity of an advisor to the commander on all matters pertaining to the NBC-D of subordinate units/formations. When augmented, be responsible for the NBCWRS.	BOLC/BNCOC C ³		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Recommend employment of special NBC-D elements/units, if available.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	WOBC
Operate and use automated systems for calculations and data processing where appropriate. If an automated system is not available, personnel in NBC centers must be able to perform the same tasks manually.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Act as an advisor to the commander on all matters pertaining to cooperation in NBC-D with units/agencies of other nations.	ANCOC C ³		EM Apprentice Course/EM Craftsman Course Unit	WOBC
Unit NBC-D officers and enlisted personnel (assisted by enlisted alternates)				
Provide technical assistance to the commanders and staff on NBC-D training and operations.	AIT BNCOC Unit		EM Apprentice Course Unit	WOBC
Coordinate the unit's NBC-D activities.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	WOBC
Provide NBC-D training to achieve basic operating standards of proficiency for the unit, the individuals of the unit.	AIT/BOLC		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Plan and supervise NBC-D training aspects of operational training exercises and maneuvers.	C ³		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Supervise preparation of unit NBC-D SOPs and adapt them to existing plans of other units as required.	AIT BNCOC ANCOC C ³		EM Apprentice Course Unit	WOBC
Supervise operations and maintenance of NBC material.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	WOBC

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Determine by dosimetry or by calculation (as appropriate) the total dose and time of stay in and/or transit through radiological contaminated areas to avoid exceeding command exposure guidance.	BOLC/BNCOC ANCOC C ³		Dosimetry is taught by Bio-environmental Career Field	WOBC
Prepare fallout prediction patterns and perform the tasks of the NBCWRS (may be assigned to meteorological, operational, and/or navigational officers).	BOLC/BNCOC ANCOC C ³		EM Apprentice Course/CBRN Cell Unit	CBRN Basic Course/WOBC
Plan NBC reconnaissance and advise commanders on the best routes to cross or bypass an NBC contaminated area.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Plan and coordinate decontamination within the unit and advise the commander.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Maintain records of the unit's radiation exposure.	C ³		EM Apprentice Course Unit	WOBC
Estimate downwind hazard for chemical attacks.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course Unit	CBRN Basic Course/WOBC
Report NBC data to next higher Headquarters and perform the NBC reporting and warning tasks.	AIT /BOLC BNCOC ANCOC C ³		EM Apprentice Course/CBRN Cell Unit	CBRN Basic Course/WOBC
Evaluate individual and unit competence in NBC-D and advise the commander on the unit's ability to survive and to continue operations in an NBC environment.	AIT /BOLC BNCOC ANCOC C ³		EM Craftsman Course Unit	WOBC
Operate and use data processing devices and possess basic knowledge of the structure of programs used in NBC warning and reporting where appropriate.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course/CBRN Cell Unit	CBRN Basic Course/WOBC
Additionally, all NBC-D officers/NCOs				
Identify the hazards related to risks of Low Level Radiation (LLR), release other than attack (ROTA), and Toxic Industrial Materials (TIM).	BOLC/BNCOC ANCOC C ³		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Make contingency plans for units facing LLR, ROTA, and TIM hazards.	C ³		EM Apprentice Course/EM Craftsman Course/Unit	WOBC
Act as an advisor to the commander on all matters pertaining to LLR, ROTA, and TIM hazards.	BOLC/BNCOC ANCOC C ³		EM Apprentice Course/EM Craftsman Course/Unit	WOBC

NOTE: The yellow indicates that there is a doctrine/requirement. The blocks that are yellow but have no identified school/command/education course may be gaps.

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Table VI-16. Education and Training Activities to Meet NCB Specialist (non-medical) Basic Standards of Proficiency for Commanders

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Understand the principles of NBC-D.	BOLC C ³		N/A (Air Force does not have EM CBRN-D Commanders)	CBRN Basic Course/WOBC
Know the defense organization and the NBCDE available.	BOLC C ³		N/A (Air Force does not have EM CBRN-D Commanders)	CBRN Basic Course/WOBC
Assess the capabilities of the NBC-D forces under their command.	BOLC C ³		N/A (Air Force does not have EM CBRN-D Commanders)	WOBC
Assess the effects of NBC munitions on unit/formation, especially on operations to be conducted.	BOLC C ³		N/A (Air Force does not have EM CBRN-D Commanders)	CBRN Basic Course/WOBC
Issue orders and take measures depending on situation and mission.	BOLC C ³		N/A (Air Force does not have EM CBRN-D Commanders)	WOBC
Plan operations taking into account the NBC threat and the readiness of units for operations in an NBC environment.	BOLC C ³		N/A (Air Force does not have EM CBRN-D Commanders)	WOBC
Estimate the effects of wearing NBC IPE for an extended period of time and understand what measures can be taken to mitigate those effects on the combat effectiveness and well being of their forces.	C ³		N/A (Air Force does not have EM CBRN-D Commanders)	CBRN Basic Course/WOBC
Be familiar with the available medical prophylactic countermeasures.	Formal training not outlined in doctrine. After IET no further training. (This is an example of the stated Gap of no formal training in the later years of a career.)		N/A (Air Force does not have EM CBRN-D Commanders)	CBRN Basic Course/WOBC
Be familiar with integration of NBC training in exercises.	Formal training not outlined in doctrine. After IET no further training. (This is an example of the stated Gap of no formal training in the later years of a career.)		N/A (Air Force does not have EM CBRN-D Commanders)	CBRN Basic Course/WOBC

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**Table VI-17. Education and Training Activities to Meet NCB Specialist (non-medical)
Survival and Unit Basic Operating Standards**

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Take immediate and correct action upon warning of an imminent NBC attack or arrival of a CB agent or radiological fallout.	BCT/BOLC BNCOC Unit Annually		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Determine the presence and nature of NBC hazards in the unit's area and take effective measures to mitigate, to the extent possible, the effects of an NBC attack.	AIT/BOLC BNCOC ANCOC C ³		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Properly use unit NBC protective equipment and supplies and maintain them in a high state of serviceability and readiness.	BCT/BOLC BNCOC Unit Annually		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Enforce a high order of health, hygiene, and sanitation to minimize the spread of disease following a biological attack.	BCT/BOLC BNCOC Unit Annually		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Maintain a degree of protection appropriate to the risk while continuing to conduct the primary mission of the unit.	AIT/BOLC BNCOC ANCOC		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Perform necessary decon of supplies, equipment, and areas for which it is responsible in the performance of its primary duties.	BCT/BOLC BNCOC Unit Annually		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Delineate the areas of an NBC hazard.	Unit Annually		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Delineate contaminated areas and mark them by using standard signs.	BNCOC Unit Annually		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Cross, bypass, or function in contaminated areas with minimum loss of efficiency, decontaminating where necessary.	BOLC/BNCOC Unit Annually		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Operate efficiently over an extended period of time (to be determined by the commander...) with personnel in full protective equipment to include wearing the protective mask.	BCT/BOLC BNCOC Unit Annually		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Report nuclear detonations, CB attacks, and associated hazards, hazard areas, ROTAs.	WLC BNCOC Unit Annually		EM Apprentice Course/EM Craftsman Course/Unit	CBRN Basic Course/WOBC
Assign NBC personnel based on standards of proficiency outlined in FM 3-11.	C ³		EM Apprentice Course/EM Craftsman Course/Unit	WOBC

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1. Army-Specific Training for NCB Personnel

The US Army Chemical School (USACMLS) is responsible for the development and implementation of all Army NCB Soldier training and education, including education and training on the initial set of CBRN tasks that enable them to perform missions equivalent to their level of responsibility. As their level of responsibility increases, so must their education and training.

Initial entry enlisted CBRN soldiers and officers receive training in chemical, biological, and radiological agents; hazardous materials; smoke and decontamination operations; and individual protective clothing and equipment. This training culminates with toxic agent training at the Chemical Defense Training Facility. Toxic agent training is a mandatory component of all Chemical Corps initial entry and professional development courses.¹⁴⁸

Initial NCB officer training begins with the CBRN Basic Officer Leader Course (BOLC). Officers in the grade of O-1 attend this training. This course provides NCB fundamentals and incorporates knowledge of CBRN staff functions, staff operations, administrative procedures, and organizational and personnel management. Focus is also placed on logistics operations, individual/unit training, and individual and unit tactical operations. Additionally, the course provides professional development for performance of duties as platoon leader and member of a battalion staff. Upon graduation, officers are awarded Officer Specialty Code 74A within the Career Management Field (CMF) 74.

The Chemical, Biological, Radiological, and Nuclear, Captains Career Course (CBRNC³) is the final NCB Defense course that CMF 74 officers attend. In this course, chemical officers participate in activities to further develop and reinforce skills and knowledge in the areas of leadership, training management, written and oral communications, Army Operations (fundamentals and doctrine), staff procedures, NBC defense (fundamentals and doctrine), smoke/flame operations, decontamination, and reconnaissance. This is the last phase of an officer's formal NCB training. Officers may attend this course as early as their fifth year in Service. For a career officer this could equal a 25-year span with no additional formal training.

Enlisted training begins during CBRN Operations Specialist Advanced Individual Training (AIT) at Fort Leonard Wood, Missouri. During AIT, soldiers receive initial training on CBRN reconnaissance, decontamination, and smoke operations. In addition

¹⁴⁸ USD(AT&L). CBDP Annual Report to Congress, Op. cit., p. 101.

soldiers receive training on NCB Defense equipment. Upon graduation, soldiers are awarded the MOS 74D.

Intermediate training for enlisted soldiers is the CBRN Basic Non-Commissioned Officers Course (BNCOC). The course provides training in combat survival skills, NCB maintenance, preparation for a NCB attack, behavior of chemical and biological agents, and others. This course provides soldiers with the skills necessary to be NCB subject matter experts in both non-chemical and chemical units. Graduates are expected to serve as the Commander's principal advisor in CBRN Operations. Enlisted soldiers could receive this level of training during their fourth year of service. Soldiers who do not attain the grade of E-7 may not have the opportunity to attend formal NCB training for the remainder of their career. For a career soldier this could equal an 18-year span of no additional specialty-specific formal training.

Senior training for the enlisted soldiers is the CBRN Advanced Non-Commissioned Officers Course (ANCOC). Soldiers attending this training must be a Staff Sergeant (E-6) promotable or a Sergeant First Class (E-7). The purpose of the course is to provide advanced technical and tactical instructions in NCB defense operations, logistics, and maintenance management. This is the last phase of an enlisted soldier's formal NCB training. Soldiers may attend this course as early as their fifth or sixth year in Service. Thus, a career soldier could go another 25 years without additional specialty-specific formal training.

This gap in formal training available to the CBRN soldier and officer must be considered. CBRN Specialists should have a method to continue to receive professional development and training to stay relevant. The Army does have a correspondence course program and the USACMLS has developed a Web-based portal, but resource and personnel constraints limit these programs. Current correspondence courses include the following:

- Bio-detection Unit Leaders Course
- Chemical Advanced Refresher Course
- Chemical Specialist Refresher Course (MOS 74D30)
- Decontamination Course
- Smoke Course
- Unit NBC Defense Officer/NCO Refresher Course
- Decontamination Course

- Unit NBC Defense Officer/NCO Refresher Course
- RC Chemical Senior Leader Qualification (PH1)

The time spent in formal training is also limited by current policies. This coupled with the span of time after training is completed increases the issue. *TRADOC Regulation 350-70, Systems Approach to Training (SAT) Management, Process, and Products*, requires that training be evaluated periodically and updated to keep in line with the current operational environment.¹⁴⁹ The USACMLS conducts routine reviews of the critical tasks being taught. Conducting a Critical Task Selection Board is critical to keeping these programs current.

A CBRN Specialist serves in many specialized duty positions that have responsibilities above and beyond the training their current skill level provides. To address the training requirements for these positions, the USACMLS developed several education and training courses commonly referred to as “functional courses.” Functional courses prepare Army and other Service personnel for assignment to special units or specific duty positions and increase their value to the service. Functional courses include:

- NBC Reconnaissance
- Master Fox Scout
- Biological Integrated Detection System (BIDS) Preplanned Product Improvement (P3I)
- BIDS JBPDS
- Decontamination Procedures (Non-U.S.)
- Radiological Safety
- Operational Radiation Safety
- Analytical Laboratory Systems Course
- Unified Command Suite
- Civil Support Skills Course
- Chemical Pre-command Course
- Technical Escort
- CBRN Responders Course
- CBRN Mass Casualty Decontamination Course

¹⁴⁹ US Army. Training and Doctrine Command. *TRADOC Regulation 350-70, Systems Approach to Training (SAT) Management, Process, and Products*. Fort Monroe, VA: 9 March 1999.

A number of Army organizations other than the USACMLS offer individual and unit training. These organizations include:

- Edgewood Chemical Biological Center (ECBC)
- U.S. Army Tank Automotive and Armaments Command's Armaments Research Development & Engineering Center
- West Desert Testing Center (WDTC), Dugway Proving Ground

2. Navy-Specific Training for NCB Personnel

As previously noted, NCB defense in the Navy is a collateral billet for both officers and enlisted personnel. The discussion of training for Naval NCB personnel is located in the Navy education and training section above.

3. Air Force-Specific Training for CBRN Personnel

The U.S. Air Force policy is to provide initial NCB defense training to military personnel and emergency-essential civilians in, or deployable to, medium- and high-threat NCB areas (Table VI-10), and to provide recurring training every 20 months. Selected command, control, and response personnel receive additional home station and/or in-residence training to meet the requirements for hazardous material (HAZMAT) emergency response, weapons of mass destruction emergency response, or exercise evaluation team duty.

Air Force CBRNE Specialists are identified with the Air Force Specialty Codes (AFSCs) 3E9X1, Emergency (Consequence) Manager and CBRN/HAZMAT Responder/Trainer, 43EXX/3B0X1, Bioenvironment Engineer, and 43TXX/4T0X1, Medical Laboratory Technician.

The professional training for AFSC 3E9X1 is conducted by the Air Force CE Readiness School, Fort Leonard Wood, Missouri. Training is conducted with Service instructors and established standards of proficiency for NCB defense training, including toxic chemical agent training at the Chemical Defense Training Facility.

Bioenvironmental Engineering officers and technicians are trained at the U.S. Air Force School of Aerospace Medicine (USAFSAM), located at Brooks City-Base, San Antonio, Texas. CBRN responder and Hazardous Work Operations and Emergency Responses (HAZWOPPER) training is conducted along with CBRN identification, quantification, and control techniques based around health risk assessments. Courses include apprentice-, craftsman-, and advanced-level courses for both officers and enlisted.

Medical laboratory personnel currently receive specialized NCB laboratory systems equipment training at Brooks City Air Base and on Fort Sam Houston.

4. Marine Corps-Specific Training for CBRN Personnel

Commanders rely upon the expertise of NCB defense personnel when conducting NCB defense training. These personnel consist of the CBRN Defense (CBRN-D) Officer (CBRNDO)/Military Occupational Specialty (MOS) 5702 and the CBRN-D NCO/MOS 5711. Both are formally trained at the Marine Corps NBC Defense School and USACMLS, Fort Leonard Wood, Missouri, to acquire the basic skills and provide them with advanced knowledge necessary to function at and provide NCB support to higher-level commands.¹⁵⁰ The USMC has a limited number of MOS-qualified CBRN-D specialists (MOS 5702 and MOS 5711). These specialists are assigned to organizations where their expertise provides the greatest impact.¹⁵¹ Most of the CBRN team members are not NCB Specialists, but they are Marines who receive additional training focused on their individual mission. The USMC relies on the individual Marine to be able to operate in an NCB environment as a conditioned response.

In addition, the CBRNDO receives two levels of individual training conducted during assignments within the Operating Forces. The objective of this training is to provide CBRNDOs “the knowledge and experience required to provide effective CBRN-D support, advice, and assistance to commanders at every level. This objective is accomplished through completion of formal schools, individual training, specialized schools, exercises, and operational deployments.”¹⁵² These training levels are designed to reinforce basic skills and advanced knowledge, and to provide additional skills and capabilities required to fulfill CBRN-D duties at the unit-level as well as at the MAGTF or Major Subordinate Command-level.

“Completion of the required initial basic instruction and sustainment of proficiency are paramount to the ability of the unit CBRN Defense Officer and CBRN Defense Specialist in accomplishing the mission of CBRN defense in respective units. The minimum training requirements for initial instruction and sustainment of proficiency are located in *MCO 3500.70, NBC Defense Training and Readiness Manual*.”¹⁵³

¹⁵⁰ Marine Corps Order *MCO 3500.70*, p. 2-3, 2-8.

¹⁵¹ Marine Corps Warfighting Publication *MCWP 3-37*, p. 2.

¹⁵² *Ibid.*, p. 2-3.

¹⁵³ USD(AT&L), CBDP Annual Report to Congress, *Op. cit.*, p. 115.

The USMC developed and implemented an MOS career roadmap for all enlisted CBRN Defense Specialists, Private through Master Gunnery Sergeant. “The roadmap outlines the combination of skill training (both MOS and other skill training), professional military education, and off-duty, voluntary education necessary to progress and refine those abilities necessary to increase combat readiness.”¹⁵⁴ Table VI-18 provides a complete list of schools available for CBRN Officers and Specialists.

Table VI-18. USMC CBRN Defense Operating Force Training

Training Command	Type of Training	Training Duration
USMC CBRND School	NBC-D Specialist Basic Course	12 weeks
USMC CBRND School	NBC-D Officer Basic Course	7 weeks
USACMLS	Chemical Captains Career Course	26 weeks
USACMLS	NBC Reconnaissance	6 weeks
USACMLS	Radiological Safety (Installation Level)	3 weeks
USACMLS	Operational Radiation Safety	1 week
USA Red Stone	Technical Escort	3 weeks, 3 days
DNWS	Radiological Emergency Team Operations Course	9 days

5. Joint and Multi-Service Training for CBRN Personnel

In addition to the courses, programs of instruction, and schools already mentioned, there are additional locations where Joint and multi-Service NCB training is conducted, including:

- Defense Nuclear Weapons School
- National Training Center
- U.S. Army Chemical School

At each of these locations, specialized courses, exercises, and facilities exist that are utilized by one or more Service simultaneously. For example, the U.S. Army Chemical School has established a large facility where NCB Specialists receive training in the required skills and capabilities.

C. NCB SPECIALIST (MEDICAL) – EDUCATION AND TRAINING ACTIVITIES

1. Education

There are no dedicated DoD schools for NCB medical education and training. Existing schools integrate Service specific and Joint courses as part of their overall curriculum. The Army Medical Department Center and School (AMEDDCS), the Navy Operational Medical School, the Uniformed Services University of Health Sciences

¹⁵⁴ Ibid., p. 138.

(USUHS), and the National Defense University (NDU) incorporate various courses that wholly or partly include medical NCB as prescribed by the Services to enhance the overall readiness posture of the Service members.

NCB medical education and training occurs in many different Joint and Service-specific environments. An extensive listing of over 160 courses in the DoD offering some degree of CBRN medical education and training is found at Appendix E. These courses include initial and sustainment education and training for all Services, “gold-standard” non-degree granting professional courses based at our DoD national NCB defensive research laboratories, and graduate level degree-granting programs at the USUHS. The course list ranges from veterinary food inspection specialist courses to the two established and nationally recognized “gold standards” for NCB medical education and training: Medical Management of Chemical and Biological Casualties (MCBC) course and the Medical Effects of Ionizing Radiation (MEIR) course.

Appendix E provides a course description, title, sponsor, which standards of proficiency are fulfilled, the target audience, type of instruction, methodology by which to certify student proficiency (i.e, testing), type of Continuing Education Units (CEU) awarded and by which organization, whether or not it aligns with the National Incident Management System (NIMS) as mandated by the Department of Homeland Security of which the DoD is a signatory, course location, and the course point of contact.

Only seven courses have been certified/validated to meet some or all of the standards of proficiency.¹⁵⁵ These seven courses are:

1. Field Management of Chemical and Biological Casualties (FCBC)
2. Medical Management of Chemical and Biological Casualties (MCBC)
3. Medical Effects of Ionizing Radiation (MEIR)
4. Emergency Medical Preparedness/Response Course (EMPRC) – Basic Awareness
5. Emergency Medical Preparedness/ Response Course (EMPRC) – Operator/Responder
6. Emergency Medical Preparedness/Response Course (EMPRC) – Clinicians
7. Emergency Medical Preparedness/Response Course (EMPRC) – Executives/Commander

¹⁵⁵ Defense Medical Readiness Training Institute (DMRTI). *Chemical, Biological, Radiological, Nuclear and (High-Yield) Explosives (CBRNE) Training – Standards of Proficiency and Metrics*. Fort Sam Houston, TX: 1 October 2003.

Within Appendix E, there is a more in-depth analysis/cross-walk of the standards of proficiency as they apply to the respective seven courses (that includes the target training and education audience), to the Universal Joint Task List (UJTL), and finally to the overarching *Joint Publication 4-02, Health Service Support*, doctrine and guidance. In order for any existing or new medical NCB course to be validated, the curriculum must be submitted to the Defense Medical Readiness Training Institute (DMRTI) for review against the Standards of Proficiency, as stated earlier.

Overall, the course audiences include medical providers and non-providers; field versus Military Treatment Facility versus Shipboard personnel; enlisted and officer; technician/technologist versus General Duty; dental personnel versus medical personnel; medical personnel versus non-medical personnel.

Determining the intent of the course, course sponsors, topics and objectives covered, intended audience, types of practical experiences included (tabletop, field, command and control), and delivery methods employed allowed better understanding of the types of NCB medical training currently offered. The course sponsor, length, and scope (e.g., delivery methods used, intended audience, learning objectives, level of training) are identified in Appendix E.

The curriculum content of each NCB training course was reviewed if available. Content ranges from offering a single, 1-hour NCB lecture in a largely unrelated course to providing extensive, graduate-level courses devoted only to NCB. Many military medical training courses have utilized material from the MCBC and the MEIR course for curriculum development. Courses are presented in the classroom and through distance learning media such as satellite broadcasting, videotape series, and computer-based training programs.

In response to the ASD(HA) memorandum dated 29 April 2002, DMRTI established a multi-Service group to review the Services' current NCB medical training programs; identify NCB commonalities, redundancies and inefficiencies within DoD courses; and generate a Tri-Service baseline curriculum for medical personnel for review by the Defense Medical Readiness Training and Education Council (DMRTEC). In December 2002, DMRTI released a report, *Cross Service Identification of Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives (CBRN) Training Commonalities and GAP Analysis Report*, which highlighted details of initial NCB medical education and training for enlisted and officer personnel. Army medics, Navy corpsmen, and Air Force personnel all receive some NCB awareness training at the time

of initial basic training; however, initial medical officer training varies between the Services.¹⁵⁶ Information to update the 2002 DMRTI Report is shown in Exhibit VI-8.

NCB Medical Education and Training Status

New Army Medical Department (AMEDD) officers receive 8 hours of NBC classroom instruction and NBC field training during their Officer Basic Course (OBC).

Navy medical officers do not receive initial military training at Officer Indoctrination School (OIS). Junior Navy medical officers and nurses normally obtain their initial readiness training by attending C4 and/or by training through their assigned mobility platforms. Navy Medical Officers assigned with the Marine Corps Operating Forces are required to attend the Field Medical Services Officer course.

Air Force medical officers attending Commissioned Officers Training (COT) receive basic awareness training on medical aspects of nuclear, biological, and chemical warfare during the 2-day/1-night post-graduation Aerospace Expeditionary Force Deployment Exercise, which occurs the week/weekend before graduation from COT. This course replaces the Medical Readiness Indoctrination Course (MRIC). Air Force medical officers receive advanced MRT if attending specific medical specialty courses such as Bioenvironmental Engineering (BEE), Public Health Officer (PHO), and Aerospace Physiologists. Advanced CBRN training is also provided through Bioenvironmental Engineering Readiness (BER), Contingency Public Health Operations (CONOP), Flight Nurse, and Battlefield Nursing courses.

Physician Assistants receive their initial training while attending the inter-service program located at Ft Sam Houston. They receive a block of instruction on readiness issues including a section on the medical aspects (diagnosis and treatment) of CBRN.

Exhibit VI-8. NCB Medical Education and Training Status

In the new DMRTI Core Knowledge training continuum, personnel are required to elect one of the currently validated EMPRC courses for their respective specialty/job title to fulfill the NCB training requirements.

Of the various schools and despite not having NCB courses validated in accordance with the DMRTI standards of Proficiency, the Uniformed Services University of the Health Sciences (USUHS) is the most strongly involved in Combating Weapons of Mass Destruction by integrating NCB into all accredited degree programs. USUHS students are provided with more than 28 hours of training in NCB medically relevant areas:

- Medical effects of nuclear, biological, and chemical agents on the human body
- Response to suspected exposure—to include detection, decontamination, and medical countermeasures
- The psychological stresses of combat and terrorism

¹⁵⁶ Defense Medical Readiness Training Institute (DMRTI). *Cross Service Identification of Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives (CBRNE) Training Commonalities and GAP Analysis Report*. Fort Sam Houston, TX: 10 December 2002.

The USUHS Clinical Simulator and Patient Simulator Laboratory (PSL) provides educational experiences for both clinicians and emergency operations personnel in WMD and Terrorist (WMD/T) scenarios during a USUHS School of Medicine course, The Scientific, Domestic, and International Policy Challenges of WMD/T. The Course on WMD/T includes two modules:

- Part I, The Emerging Threat of Biological Weapons and Bioterrorism.
- Part II, Nuclear, Radiological, High Explosives, Chemical Agents, and Unusual Weapons. Simulated scenarios have been designed to depict bioterrorism, chemical warfare, medical effects of radiation, and trauma.

USUHS has also developed a congressionally mandated and funded online NCB Preparedness Education Program (OPEP) to bring no-cost online education about NCB incidents to civilian and uniformed emergency responders and healthcare providers across the nation. This interdisciplinary, tiered educational program was developed by the Center for Disaster and Humanitarian Assistance Medicine (CDHAM) at USUHS in collaboration with subject matter experts from the Department of Defense; Department of Health and Human Services; Department of Homeland Security; United States Public Health Service; Centers for Disease Control and Prevention; Veterans Administration; and the Armed Forces Radiobiology Research Institute.¹⁵⁷

Finally, USUHS sponsors a three-semester, graduate-level, CBRN evening course for a mix of over 125 students including military and civilian physicians, nurses, administrators, police, and emergency responders. The course is accredited for Continuing Health Education (CHE) by USUHS and graduate credit hours by the Naval War College.

2. Training

NCB medical exercises are often embedded in Service and Joint exercises; however, in warfighter-centric exercises, medical play is generally limited. For this report, an in-depth review focused on those events that had significant medical NCB play. Medical NCB exercises and drills are categorized as facility- or infrastructure-related programs or operational medicine programs.

Healthcare facility-based exercises are driven by Joint Commission requirement for semiannual external emergency/mass casualty exercises; one of the semiannual

¹⁵⁷ Uniformed Services University of the Health Sciences (USUHS). Online Preparedness Education Program. http://opep.usuhs.edu/overview_intro.do.

exercises includes reaction to an NCB or mass casualty incident. Additionally, *DoD Instruction (DoDI) 2000.18, Department of Defense Installation CBRNE Emergency Response Guidelines*, places a priority on institutional NCB training, exercise, leader awareness, and planning to support emergency response.¹⁵⁸ DoD healthcare facilities are also part of the National Disaster Medical System (NDMS). Guidance in *DoD Directive (DODD) 6010.22, National Disaster Medical System*, mandates coordinated NDMS exercises with local NDMS-affiliated hospitals that “include a weapons of mass destruction component.”¹⁵⁹

While all Medical Treatment Facilities (MTF) conduct exercises, little data exists to support the efficacy of the exercises. NDMS exercises focused on Disaster Medical Assistance Teams (DMATS) and the MTF’s ability to accept mass casualties. The NDMS exercise program also includes patient evacuation; however, that component has limited play. The Katrina experience highlighted that the patient evacuation component of NDMS had never been fully exercised.

The Army’s AMEDD CBRN Exercise Program (ACEP) focuses on NCB medical capabilities for deploying units and homeland defense forces. U.S. Army Medical Command (MEDCOM) *Regulation 525-4, Emergency Preparedness*, identifies hazard analyses, professional NCB training and exercises, and operational support to medical organizations as critical components for medical NCB operations.¹⁶⁰

The Navy Bureau of Medicine (BUMED) conducted a Service-wide, comprehensive, medical facilities-based exercise program called Disaster Preparedness, Vulnerability Analysis, Training and Exercise (DVATEX). DVATEX was conducted across all Navy healthcare facilities and was designed to provide assessment, training, vulnerability analyses, and exercises of the facility’s emergency management plan.

The Air Force Medical Service conducted a Service-wide tabletop exercise (TTX) named Code Silver. Code Silver included wing and civilian community NCB responders and included 91 installations (80 active duty, 11 Air National Guard). Code Silver

¹⁵⁸ Department of Defense Instruction, *DoDI 2000.18, Department of Defense Installation Chemical, Biological, Radiological, Nuclear and High-Yield Explosive Emergency Response Guidelines*, 4 December 2002.

¹⁵⁹ Department of Defense Directive. *DoDD 6010.22, National Disaster Medical System*, 21 January 2003.

¹⁶⁰ US Army. Headquarters. US Army Medical Command (MEDCOM). *MEDCOM Regulation 525-4, Emergency Preparedness*, 11 December 2000.

focused on integrating the activities of medical treatment facilities, installations and civilian responders in responding to an NCB event. Described as a team-building exercise, the TTX identified shortfalls in planning through cross-communication and senior leadership involvement. The Air Force also conducted a non-medical exercise with significant medical play referred to as “Kunsan Focused Effort” conducted between January 2004 and April 2005 at Kunsan Air Base (AB), Republic of South Korea. The focus on exercising a biological event drove significant medical exercise activities. The exercise incorporated casualty management and treatment, evacuation, quarantine and contamination control, casualty replacement, and mortuary affairs.

At the Joint level, multiple NCB exercises have been conducted; however, few NCB medical-specific exercises were identified. Pandemic influenza planning, however, has driven an increase in medical planning and exercising across all the combatant commands (COCOMS). Northern Command’s (NORTHCOM) major exercises included: Top Officials (TOPOFF) 3, Ardent Sentry, and Northern Edge. These Total Force Exercises included some medical NCB activity for MTFs; however, reports indicate there was no universal play across the medical services. Joint Forces Command (JFCOM) NCB medical exercises focus on sharing of NCB information across Civilian and Military Command and Control (C2) domains and medical product interoperability.

European Command’s (EUCOM) Flexible Response was an NCB consequence management exercise that included medical participation across EUCOM as a portion of the larger consequence management community. Guardian Shield was a Command Post Exercise involving release of chemical weapons. There was minimal NCB medical play to support the exercise.

Central Command’s (CENTCOM) Eagle Resolve was focused on supporting the Government of Qatar in crisis management. As a strategic-level exercise, there were discussions regarding the organization of medical assets but no NCB medical play.

There is no requirement or standardization related to the conduct of, or participation in, exercises and drills. The exercise design teams identify objectives based on the scenario and inject to drive operational responses. While reality-based training is an objective, artificiality of the exercise environment in addition to the need to maintain patient care services during the exercise often preclude full participation.

D. EDUCATION AND TRAINING GAPS, OBSERVATIONS, AND RECOMMENDATIONS

Observation: NCB passive defense requirements vary by Service.

The Services agreed to the doctrine and requirements as set forth by the Joint publications and multi-Service manuals, with exceptions – additional requirements that a Service established for itself or requirements that a Service noted as non-applicable. Given the varying missions of the Services and their differing operating environments, it makes sense that some requirements, standards, and capabilities will apply to some Services and not to others.

Recommendations:

1. The Services should investigate opportunities for Joint NCB passive defense EDUCATION by leveraging existing curricula or developing new education courses.

The subjects, material, and knowledge taught in classrooms may be similar for some or all of the Services. The Marine Corps already leverages Army courses taught at the United States Army Chemical School, and Joint Professional Military Education to address NCB topics in development. Other opportunities may exist for developing Joint medical NCB education and training, as well as Joint education in other NCB passive defense topics.

2. NCB passive defense individual and unit TRAINING should continue to be conducted at the Service level; where applicable, specialized Joint TRAINING for both individuals and units should continue to be conducted and potentially expanded to take advantage of facilities, training centers, subject matter experts, etc.

Because of the varying Service-required NCB passive defense skills and capabilities and Service responsibility for training,¹⁶¹ training to Service-specified requirements and standards should be conducted at the Service level and should incorporate Joint doctrine and multi-Service TTPs. Joint and multi-Service training opportunities should be utilized as well to allow access to specialized facilities, training centers, subject matter experts, or other features.

¹⁶¹ *United States Code, Title 10, Subtitle B, Part I, Chapter 803, Sections 2013, 5013, and 8013.* Washington, DC: 2 January 2006. <http://uscode.house.gov/>. (accessed 9 JUN 2007).

3. Advanced Medical NCB passive defense EDUCATION and TRAINING (i.e., field medic training) should be conducted at the Joint level. As applicable, Service-specific medical NCB education and training should be conducted at the Service level.

The amount of Service-specific medical NCB passive defense education and training was unclear to the study team. However, opportunities clearly exist for the incorporation of advanced-level medical NCB passive defense Joint education and training (i.e. Field Management of Chemical and Biological Casualties (FCBC), Medical Management of Chemical and Biological Casualties (MCBC), and Medical Effects of Ionizing Radiation (MEIR)).

Gap: Military NCB medical advanced education and training for patient care providers exists but lacks a Service requirement. In practice, *very few Service healthcare providers are required to attend the advanced-level courses.*

The major gap identified in analysis of the doctrine and requirements, versus the validated courses and their content, is that there are only limited requirements for attendance at the advanced-level professional medical courses (FCBC, MCBC, and MEIR) for healthcare providers in all the Services. Attendees comprise a minimal subset of all healthcare providers in uniform—generally providers in certain operational billets, in certain healthcare roles, and on certain types of response teams. Where providers are identified to take advanced-level medical professional NCB training, these requirements vary from Service to Service and are not consistent. In other cases, more general doctrinal publications “suggest” attendance at the advanced-level courses, but there are no specified requirements. While Services may vary in their general NCB education and training requirements as a function of their differing missions, it is unclear whether that variation should carry over into the medical community or whether it should be expected that patient care providers across the Services receive approximately the same education and training for the treatment of NCB casualties.

Recommendation: OSD(HA), the Services, and the Service Surgeon Generals should identify the advanced NCB medical knowledge required for patient care providers and determine how that requirement could best be met. In particular, identify whether the advanced NCB medical education and training may be met via the three professional-level courses (FCBC, MCBC, and MEIR) or other courses (if such a requirement exists).

This gap and its resolution have been identified by DMRTI and members of the medical community as a high priority issue.

Requirements and doctrine should be based on the skills and capabilities necessary for accomplishing advanced NCB medical tasks. Once those skills, capabilities, and tasks are identified, requirements and doctrine can be established.

Using the doctrine and requirements, existing courses should be assessed and considered for advanced education and training, possibly with changes as necessary to conform to the established advanced NCB medical requirements. Additional courses should be identified or created as necessary. Further, the Services must commit both personnel and resources to facilitate compliance with the requirement. In simpler terms, once the requirement is identified, course attendees must be identified, allowed to attend, and funded for participation.

The cost of establishing an advanced medical NCB education and training requirement may be minimal. On the other hand, there are significant costs associated with the actual implementation including the cost of attendance and the cost to healthcare institutions which would be required to provide a replacement on-site while the student provider was attending the advanced course. Some training may also be accomplished by train-the-trainer programs, where a single or a minimum number of individuals at a command are designated to attend the training and then provide training back to other patient care providers at their commands.

For the Army, the decision was made on August 6th, 2007, to establish requirements for advanced medical NCB training. The U.S. Army Medical Command promulgated policy establishing required advanced-level medical NCB courses, including MCBC, FCBC, MEIR, the Homeland Security Medical Executive Course, Hospital Management of CBRNE Casualties Course, and the Army North Defense Support of Civil Authorities Course. One or more of these courses may be required for Army medical personnel, depending on their assigned area and billet responsibility.¹⁶² The memo requires that responsible commands take action to meet these requirements by the end of fiscal year 2008.

It is unclear at this stage what additional requirements exist or will be established for the Navy or the Air Force to mirror this action. Given that the courses already exist, the establishment of requirements and the execution of said requirements should only take a minimal amount of time to accomplish if necessitated by the Services.

¹⁶² Headquarters, United States Army Medical Command. Policy on Advanced Chemical, Biological, Radiological, Nuclear, and High Yield Explosives (CBRNE) Medical Training. *Memorandum*. Fort Worth, TX: 6 August 2007.

Gap: Currently, only 7 NCB medical education courses, of over 160 with some NCB content, are validated by Defense Medical Readiness Training Institute (DMRTI) to meet Joint and Service educational requirements.

The educational content of the DMRTI Tri-Service CBRNE Medical Training Program, which is promulgated as the basis for NCB training for military medical personnel by the Assistant Secretary of Defense (Health Affairs) (ASD(HA)), adheres well to the doctrine and requirements and sets forth the Standards of Proficiency against which courses must be validated. Although there are over 160 Joint or Service medical courses that include some NCB content, most of these are not validated against the DMRTI Standards of Proficiency. For the courses that have not been validated, it would be incorrect to assume alignment of course content with doctrine and requirements.

The seven courses that are validated in accordance with the DMRTI Standards of Proficiency are the four initial, basic-level Emergency Medical Preparedness and Response Courses (EMPRC) courses (Basic Awareness, Operator/Responders, Clinicians, and Executive/Commander) and FCBC, MCBC, and MEIR courses designed for the professional-level education of medics and healthcare providers (clinicians). These seven certified courses meet the needs for which they are designed; however, it is difficult to find a flow from doctrine to requirements to educational activities and efforts for the three advanced-level professional courses. The four EMPRC courses meet the requirements that are laid out for basic and awareness-level education of medical personnel; and the three professional courses, MCBC, FCBC, and MEIR, provide useful advanced-level professional medical education in the medical management of chemical, biological, and radiological casualties. The three courses (FCBC, MCBC, and MEIR), conducted at United States Army Medical Research Institute of Chemical Defense (USAMRICD), United States Army Medical Research Institute for Infectious Diseases (USAMRIID), and Armed Forces Radiobiology Research Institute (AFRRI), have had difficulty in recent years obtaining consistent funding from DoD or the Services, largely because the Services have not established which providers must attend and when (discussed below). In contrast, as mentioned earlier in this report, DoD set the policy and requirements for the EMPRC basic-level courses in 2004, and the Services have responded by requiring the basic-level training of all medical department personnel. The Services are reporting compliance with these requirements to DMRTI on a quarterly basis. The Force Health Protection Council (FHPC) is responsible for monitoring Service compliance and ensuring that training requirements are met.

Recommendations:

1. The Force Health Protection Council (FHPC) should ensure Joint and Service medical NCB doctrine and standards for patient care providers are established, standardized and consistent for core knowledge and advanced, professional education and training.¹⁶³

There must be a reasonable progression from doctrine to requirements to educational activities to include advanced education for NCB Specialists (medical).

2. The FHPC should exercise the existing Joint process for coordination and integration of core and advanced NCB medical education and training to maximize existing Service strengths and identify additional training requirements.

DMRTI has been exploring this concept, but additional emphasis and resources are needed. Several DoD offices have some level of oversight and responsibility for medical NCB education and training. Responsibilities should be clarified at the Service and Joint level. Further, a sustained funding mechanism should be established for all NCB medical knowledge activities.

3. The Tri-Service [Medical] CBRNE Training Committee should review NCB components of additional Joint and Service military medical courses and validate or recommend modifications in accordance with DMRTI-promulgated Standards of Proficiency and metrics.¹⁶⁴

Observation: There is no technical and operational NCB education and training beyond the existing mid-grade officer and enlisted courses for NCB Specialists. Service members are expected to develop expertise through assignment progression.

The study team noted this observation for both of the NCB Specialist communities—non-medical and medical. As discussed above, in the medical community, the current policy sets up a potential lack of advanced-level medical NCB education. Within the NCB Specialist (non-medical) community, the last time an officer attends a specialized NCB course is as an O-3; the last time an enlisted individual attends a similar course is between E-4 and E-7, depending on the community.

¹⁶³ Assistant Secretary of Defense for Health Affairs. Policy on Military Health System Decision-Making Process. Memorandum. Washington, DC: 22 March 2006.

¹⁶⁴ DMRTI. *Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives (CBRNE) Training – Standards of Proficiency and Metrics*. San Antonio, TX: 1 October 2003.

This is not unique to the Chemical/CBRN Specialist/Disaster Preparedness military communities. In fact, in the majority of military occupations, no specialized advanced technical education is afforded post-mid-grade. Further, given that the NCB Specialists (non-medical) have likely been continuously working in their specialized fields for several years, the need for additional technical and operational education is unclear.

Recommendation: The Services should determine the need for advanced technical and operational NCB education and, as required, develop methods for sustainment, update and improvement of technical expertise for NCB Specialists, both non-medical and medical, as necessary.

For NCB Specialists (non-medical), methods for updating and improving technical and operational expertise may already be in place; however, the study team was not able to verify this. For these individuals, it is important to ensure that sustainment training is accomplished both at the junior and post-mid-grade levels. NCB Specialists must have a way of ensuring that they are familiar with the most current passive defense doctrine, TTPs, equipment, etc. Sustainment of technical expertise may require additional courses, advanced courses, and/or refresher courses.

Observation: No formal education exists to facilitate the integration of NCB operations and passive defense into overarching unit concepts of operation within or across Services.

At the mid-grade level and beyond, officers attend formal education programs designed to facilitate the overall integration of operations—or example, within a division, infantry units working with armor, artillery, signals, engineers, etc; or the interdependence of combat systems, communications networks, and engineering functions on a ship. Currently, however, it is unclear how the integration of the NCB passive defense military mission area is taught. While the purpose of passive defense is to ensure that all pieces work together to mitigate the effects of exposure to NCB hazards—with an ultimate aim of continued operations—the integration of the passive defense skills, capabilities, and standards is not formally taught the way that the integration of other components is taught.

Recommendation:

1. The Services, Joint Staff, and Joint Forces Command should assess the integration of NCB operations and passive defense into existing Service and

Joint EXERCISES that challenge NCB passive defense capabilities within and across the Services.

Exercises, even in a Joint context, challenge each Service differently. At the unit level, a Joint exercise may resemble a Service exercise as Service members each respond in accordance with their own Service's doctrine and training. Such exercises, conducted at both the Service and Joint levels, require Service leadership to account for the impacts of NCB on segments of the force and consider the implications of NCB passive defense on continued operations. A Joint exercise, however, has the added advantage of requiring staff at the Joint Headquarters level to understand Service NCB capabilities and skills, as well as the differing impacts of an NCB event on the different Services.

These exercises are conducted at the Service and Joint level currently. In assessing the level of integration of NCB passive defense and operations into the exercises, a determination and recommendation can be made as to whether additional formal education is necessary.

2. The Services, in conjunction with the senior Joint and Service military senior staff colleges and schools and the Defense Threat Reduction Agency (DTRA), should assess the need for and develop, as necessary, formal education to facilitate the integration of NCB passive defense into overarching unit operations.

Efforts are currently underway at the National Defense University to assess and develop NCB passive defense Joint Professional Military Education (JPME). Additionally, some of the staff and war colleges do have courses which incorporate passive defense, as does DTRA at the Defense Nuclear Weapons School. Similar education and training may also be incorporated into mid-grade and senior Service schools. Nevertheless, the study team was unable to determine the extent to which these courses address NCB passive defense integration or what percentage of the officer corps takes advantage of these offerings.

Observation: For a limited number of individuals who fill specialized NCB roles (developing equipment and program requirements, writing doctrine, directing research, and performing acquisition roles, among others), additional formal NCB education and training should be required.

As noted earlier, much of what individuals need to know regarding NCB passive defense relates to individual skills—wearing a mask, donning a suit, identifying hazard signs, performing decontamination, etc. There are a limited number of individuals,

however, who need not only those skills, but also an understanding of the underlying principles and science of passive defense, the associated technologies, and the current status of research. Personnel who assume specialized roles within the NCB community include, among others, material requirements authors, doctrine writers, research directors, test and evaluation, and acquisitions professionals.

For example, an individual writing material requirements for a new piece of equipment should understand the physical and chemical properties of the agents involved, the capabilities of the technologies being considered, potential employment concepts and concepts of operation, and be able to understand and assess the benefits and costs. Without this knowledge, it may be impossible to write material requirements that will result in an operationally functional and useful system.

Requirements for specific advanced degrees are in place for some military occupations and billets. On a limited basis, advanced degree assignments are available for NCB Specialists (non-medical) but the study team could not determine how many positions exist or where they support specialized NCB defense roles.¹⁶⁵

Recommendation: The Services, in conjunction with the Joint Requirements Office (JRO), Joint Program Executive Office (JPEO), Joint Science and Technology Office (JSTO), and Test and Evaluation Management Agency (TEMA), should review the Service and other agency requirements for Service positions requiring advanced civilian education.

¹⁶⁵ In over 20 years of scientific and analytical experience with the DoD NCB defense community, study team members have observed the limitations of advanced civilian education among uniformed and civilian NCB specialists.

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VII. NCB PASSIVE DEFENSE EDUCATION AND TRAINING CERTIFICATION

Training accreditation and certification provides a way to set standards for training and ensure that training is consistent with established and approved doctrine. Certification also applies to the proof that an individual or unit has attained an acceptable degree of proficiency to perform specialized duties. The accreditation and certification processes are provided in the Service specific sections of this report. Accreditation/certification as used here can apply to:

- An individual who has successfully attained skills and knowledge in a specific area
- A team or unit that has successfully attained skills and knowledge in a specific area
- Training instructors
- Individual courses offered via classroom instruction, Web-based instruction, and distance learning.
- An institution—Service specific and/or Joint—in which the training is provided.

Tables VII-1 through VII-6 provide details on the certification that is done to satisfy each of the requirements set forth in *Field Manual (FM) 3-11*.

Acronym Definitions for Tables VII-1 through VII-12

BECC	Basic Engineering Common Core	MCCS	Marine Corps Common Skills
CB	Chemical and Biological	NBC	Nuclear, Biological, and Chemical
CBR-D	Shipboard CBR Defense Operations and Training Specialist Course	NBC-D	Nuclear, Biological, and Chemical Defense
CBRN	Chemical, Biological, Radiological, and Nuclear	NBCDE	Nuclear, Biological, and Chemical Defense Equipment
CCA	Contamination Control Area	NBCWRS	NCB Warning and Reporting System
CCT	Combat Training Center	NCO	Noncommissioned Officer
CGIP	Command General Inspection Program	NECC	Naval Expeditionary Combat Command
CP	Collective Protection	O/C	Observer/Controller
DCA	Damage Control Assistant	OJT	On-the-Job Training
DPOS	Disaster Preparedness Operations Specialist Course	PQS	Personnel Qualification Standards
EET	Exercise Evaluation Team	ROTA	Release Other Than Attack
EM	Emergency Management	SEDC	Senior Enlisted Damage Control
IPE	Individual Protective Equipment	SOP	Standard Operating Procedure
LLR	Low Level Radiation	TIM	Toxic Industrial Material
IET	Initial Entry Training	TTPs	Tactics, Techniques, and Procedures

Table VII-1. Certification to Meet Individual Standards of Proficiency

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Individual Protection				
Individuals should normally receive initial NBC-D training upon entering military service and receive refresher training at regular intervals thereafter.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task	No formal certification Written/ Performance-based exams	No formal certification Written/ Performance-based exams
Individual Survival Standards				
Recognize attacks with NBC munitions and take protective action.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Recognize NBC alarms and signals.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Recognize the existence of CBRN hazards and take protective action.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Properly don, seat, clear, and check the respirator/protective mask.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Properly don protective clothing. The individual must be able to relate the use of protective clothing to the graduated levels of the NBC threat.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Take protective measures against thermal radiation (light, flash, and heat), a blast wave, and radiation effects of nuclear explosions.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Individual Survival Standards (continued)				
Carry out immediate individual decontamination.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Follow the procedures for the removal of NBC individual protective equipment.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Recognize if casualties are contaminated and perform first aid (self- & buddy-aid).	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task (self&buddy aid only)	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* All PQS certifications are renewed within 3 months of arrival at each new command. PQS is the method used for tracking surface force shipboard education, training and qualification; certification of each capability may be via oral exam or practical demonstration. Additional Naval communities, including the Naval construction battalions (SeaBees), NECCs, aviation squadrons, and other units, validate these skills and capabilities locally at their own commands as required.

Table VII-2. Certification to Meet Individual Basic Operating Standards of Proficiency

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Maintain NBC individual protective equipment (IPE) in a high state of serviceability at all times.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Req'd PQS Task	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Be proficient in taking specific actions required for maintaining operating efficiency before, during, and after NBC attacks in order to reduce the effects of NBC weapons.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	During course, written/ performance-based exams w/NEC awarded At command, Req'd PQS Task	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Recognize or detect NBC agent contamination and perform immediate decontamination of self, clothing, personal equipment, individual weapon, vehicle, and crew-served weapon.	Hands-on performance Evaluated by Drill Instructor, Training Leader or Unit leadership	During course, written/ performance-based exams w/NEC awarded At command, Req'd PQS Task (decon of self, clothing, equipment, spaces, etc)	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Recognize all standard marking signs that indicate chemical, biological, or radiological contaminated areas.	Hands-on performance during training events evaluated by Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS Task (self&buddy aid only)	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Cross or bypass marked NBC contaminated areas with minimum danger to self.	Hands-on performance during training events evaluated by Unit leadership	Not taught (may not be considered applicable for many Naval applications)	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Demonstrate proficiency in performing primary military duty—to include the use of crew/personal weapon(s)—while in the individual protective equipment for extended periods.	Hands-on performance during training events evaluated by Unit leadership	Written/ performance-based exams w/NEC awarded (may not be applicable for collectively protected ships)	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Be familiar with the procedures to be followed at the decontamination facilities of military service.	Hands-on performance during training events evaluated by Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Be familiar with the principles of Collective Protection (CP), including entry and exit from CCAs and shelter organization and operation where applicable.	Hands-on performance during training events evaluated by Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Demonstrate familiarity with the use of dosimetry devices and CB detection and monitoring equipment where applicable.	Hands-on performance during training events evaluated by Unit leadership	Complete classroom sessions (No formal course certification) At command, Req'd PQS	Written/ Performance-based exams (no dosimetry training)	MCCS CGIP using Written/ Performance-based exams
Demonstrate the ability to perform the duties of an NBC observer.	Hands-on performance evaluated by Training Leader or Unit leadership	Written/ performance-based exams w/NEC awarded	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* All PQS certifications are renewed within 3 months of arrival at each new command. PQS is the method used for tracking surface force shipboard education, training and qualification; certification of each capability may be via oral exam or practical demonstration. Additional Naval communities, including the SeaBees, NECCs, aviation squadrons, and other units, validate these skills and capabilities locally at their own commands as required.

**Table VII-3. Certification to Meet Basic Standards of Proficiency for Selected Personnel
with Taskings Requiring Additional Training**

Non-CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Personnel trained in NBC monitoring, survey, and reconnaissance				
Operate and maintain NBC equipment applicable to the task.	Training Leader or Unit leadership	During course, written/ performance- based exams w/NEC awarded At command, Req'd PQS Task	Written/ Performance- based exams	MCCS CGIP using Written/ Performance- based exams
Recognize attacks with NBC munitions and fully understand unit procedures for implementing warnings and providing protection.	Evaluated by written exam at institutional course	During course, written/ performance- based exams w/NEC awarded At command, Req'd PQS Task	Written/ Performance- based exams	MCCS CGIP using Written/ Performance- based exams
Detect and identify contamination and organize and conduct NBC monitoring and survey operations.	Evaluated by written exam at institutional course	During course, written/ performance- based exams w/NEC awarded At command, Req'd PQS Task	Written/ Performance- based exams	MCCS CGIP using Written/ Performance- based exams
Monitor personnel, food, drinking water, and equipment for NBC contamination and effectiveness of decontamination measures.	Evaluated by written exam at institutional course	Written/ performance- based exams w/NEC awarded	Written/ Performance- based exams	MCCS CGIP using Written/ Performance- based exams
Collect samples of suspected biological contamination and forward them as directed.	Evaluated by written exam at institutional course	Req'd PQS Task	Written/ Performance- based exams	MCCS CGIP using Written/ Performance- based exams
Collect samples of liquid or solid chemical agents.	Evaluated by written exam at institutional course	Not taught	Written/ Performance- based exams	MCCS CGIP using Written/ Performance- based exams
Mark NBC contaminated areas, equipment, supplies, and stores with standard marking signs.	Hands-on performance during training events evaluated by Unit leadership	During course, written/ performance- based exams w/NEC awarded At command, Req'd PQS Task	Written/ Performance- based exams	MCCS CGIP using Written/ Performance- based exams
Provide data for compilation of NBC reports.	Evaluated by written exam at institutional course	Written/ performance- based exams w/NEC awarded	Written/ Performance- based exams	MCCS CGIP using Written/ Performance- based exams
Organize and conduct NBC monitoring and surveying operations.	Evaluated by written exam at institutional course	Written/ performance- based exams w/NEC awarded	Written/ Performance- based exams	MCCS CGIP using Written/ Performance- based exams
Operate detection and survey equipment for recognizing and detecting hazards from CBRN releases.	Hands-on performance during training evaluated by Unit leadership	Written/ performance- based exams w/NEC awarded	Written/ Performance- based exams	MCCS CGIP using Written/ Performance- based exams

Non-CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Personnel trained in contamination control				
Perform necessary decontamination of supplies, equipment, and areas for which they are responsible in the performance of their primary duties.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	During course, written/ performance-based exams w/NEC awarded At command, Req'd PQS Task	Written/ Performance-based exams	CGIP using Written/ Performance-based exams
Operate and maintain assigned decontamination equipment.	Hands-on performance evaluated by Unit CBRN NCO	Written/ performance-based exams w/NEC awarded	Written/ Performance-based exams	CGIP using Written/ Performance-based exams
Establish and operate a personnel decontamination station where applicable.	Hands-on performance evaluated by Unit CBRN NCO	During course, written/ performance-based exams w/NEC awarded At command, Req'd PQS Task	Written/ Performance-based exams	CGIP using Written/ Performance-based exams
Take measures before an attack to prevent contamination and after an attack to avoid the spread of contamination.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Written/ performance-based exams w/NEC awarded	Written/ Performance-based exams	MCCS CGIP using Written/ Performance-based exams
Officers and NCOs				
Deployment of NBC observers and detection devices.	Evaluated by written exam at area CBRN Defense Course or by Unit CBRN NCO	Written/ performance-based exams w/NEC awarded	As required**	CGIP using Written/ Performance-based exams
NBC monitoring, survey, and reconnaissance.	Evaluated by written exam at area CBRN Defense Course or by Unit CBRN NCO	During course, written/ performance-based exams w/NEC awarded At command, Req'd PQS Task	As required**	CGIP using Written/ Performance-based exams
Survival procedures before, during, and after an NBC attack or <i>friendly</i> nuclear strike.	Evaluated by written exam at area CBRN Defense Course or by Unit CBRN NCO	Not taught	As required**	CGIP using Written/ Performance-based exams
CBRN downwind hazards.	Evaluated by written exam at area CBRN Defense Course	Not taught	As required**	CGIP using Written/ Performance-based exams
Radiation dose control, exposure rules, and record keeping.	Evaluated by written exam at area CBRN Defense Course	Written/ performance-based exams w/NEC awarded (record keeping)	As required**	CGIP using Written/ Performance-based exams
General protective values of material against radiation, including the selection of buildings and the construction of shelters.	Evaluated by written exam at area CBRN Defense Course	Written/ performance-based exams w/NEC awarded	As required**	CGIP using Written/ Performance-based exams

Non-CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Contamination control procedures for the permanent or temporary prevention, reduction, or neutralization of contamination for maintaining or strengthening an efficient conduct of operations.	Evaluated by written exam at area CBRN Defense Course	During course, written/ performance-based exams w/NEC awarded At command, Req'd PQS Task	As required**	CGIP using Written/ Performance-based exams

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* All PQS certifications are renewed within 3 months of arrival at each new command. Additional Naval communities, including the SeaBees, NECCs, aviation squadrons, and other units, validate these skills and capabilities locally at their own commands as required.

** Air Force bases proficiencies requirements on rank and/or assigned/deployed location.

Table VII-4. Certification to Meet Basic Standards of Proficiency for Selected Personnel with Billets Requiring Additional Training

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Command NBC-D officers and enlisted personnel in cooperation with the functional groups of the staff				
Assist the commander in providing policy and guidance to lower echelons in all matters pertaining to the development of an NBC-D capability.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Plan, conduct, and monitor NBC-D training within the command.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Evaluate the capability of lower echelons to survive an NBC attack and to continue operations in an NBC environment.	Evaluated by written exam at area CBRN Defense Course	Not taught	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Keep abreast of new TTP in NBC defense.	Evaluated by O/C at the CTC	Not taught	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Act in the capacity of an advisor to the commander on all matters pertaining to the NBC-D of subordinate units/formations. When augmented, be responsible for the NBCWRS.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Recommend employment of special NBC-D elements/units, if available.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Operate and use automated systems for calculations and data processing where appropriate. If an automated system is not available, personnel in NBC centers must be able to perform the same tasks manually.	Evaluated by written exam at area CBRN Defense Course (manual only)	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Act as an advisor to the commander on all matters pertaining to cooperation in NBC-D with units/agencies of other nations.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Unit NBC-D officers and enlisted personnel (assisted by enlisted alternates)				
Provide technical assistance to the commanders and staff on NBC-D training and operations.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Coordinate the unit's NBC-D activities.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Provide NBC-D training to achieve basic operating standards of proficiency for the unit, the individuals of the unit.	Evaluated by O/C at the CTC	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Plan and supervise NBC-D training aspects of operational training exercises and maneuvers.	Evaluated by O/C at the CTC	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Supervise preparation of unit NBC-D SOPs and adapt them to existing plans of other units as required.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Supervise operations and maintenance of NBC material.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Determine by dosimetry or by calculation (as appropriate) the total dose and time of stay in and/or transit through radiological contaminated areas to avoid exceeding command exposure guidance.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course (no dosimetry training)	CGIP using Written/ Performance-based exams
Prepare fallout prediction patterns and perform the tasks of the NBCWRS (may be assigned to meteorological, operational, and/or navigational officers).	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Plan NBC reconnaissance and advise commanders on the best routes to cross or bypass an NBC contaminated area.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Plan and coordinate decontamination within the unit and advise the commander.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Maintain records of the unit's radiation exposure.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Estimate downwind hazard for chemical attacks.	Evaluated by written exam at area CBRN Defense Course	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Report NBC data to next higher Headquarters and perform the NBC reporting and warning tasks.	Evaluated by written exam at area CBRN Defense Course	Not specifically taught (msg taught to officers in general)	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Evaluate individual and unit competence in NBC-D and advise the commander on the unit's ability to survive and to continue operations in an NBC environment.	Evaluated by O/C at the CTC	Written/ Performance exam at institutional course NEC awarded	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Operate and use data processing devices and possess basic knowledge of the structure of programs used in NBC warning and reporting where appropriate.	Evaluated by O/C at the CTC	Not taught	Evaluated by written/ performance exam at institutional course	CGIP using Written/ Performance-based exams
Additionally, all NBC-D officers/NCOs				
Identify the hazards related to risks of Low Level Radiation (LLR), release other than attack (ROTA), and Toxic Industrial Materials (TIM).	Evaluated by written exam at area CBRN Defense Course	Not taught	Training task does not apply	CGIP using Written/ Performance-based exams
Make contingency plans for units facing LLR, ROTA, and TIM hazards.	Evaluated by written exam at area CBRN Defense Course	Not taught	Training task does not apply	CGIP using Written/ Performance-based exams
Act as an advisor to the commander on all matters pertaining to LLR, ROTA, and TIM hazards.	Evaluated by written exam at area CBRN Defense Course	Not taught	Training task does not apply	CGIP using Written/ Performance-based exams

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* BECC, CBR-D, DCA/SEDC, and RPLL are courses that apply to the Surface fleet. Successful course completion is validated through a combination of written and practical exams, at the end of which a certification or NEC is awarded, depending on the course. Similarly, DPOS is evaluated through both written and practical exams and an NEC is awarded at completion. Additional Naval communities, including the Naval construction battalions (SeaBees), Naval expeditionary combat commands (NECCs), aviation squadrons, and other units, certify these skills locally at their own commands as required.

Table VII-5. Certification to Meet Basic Standards of Proficiency for Commanders

Non-CBRN Personnel	Army	Navy	Air Force	Marine Corps
Understand the principles of NBC-D.	Evaluated by written exam at institutional course	Written/Oral/Performance exams at Command	Training task does not apply	CGIP using Written/Performance-based exams
Know the defense organization and the NBCDE available.	Evaluated by written exam at institutional course	Written/Oral/Performance exams at Command	Training task does not apply	CGIP using Written/Performance-based exams
Assess the capabilities of the NBC-D forces under their command.	Hands-on performance during training events evaluated by Unit leadership	Written/Oral/Performance exams at Command	Training task does not apply	CGIP using Written/Performance-based exams
Assess the effects of NBC munitions on unit/formation, especially on operations to be conducted.	Evaluated by written exam at institutional course	Written/Oral/Performance exams at Command	Training task does not apply	CGIP using Written/Performance-based exams
Issue orders and take measures depending on situation and mission.	Evaluated by written exam at institutional course	Written/Oral/Performance exams at Command	Training task does not apply	CGIP using Written/Performance-based exams
Plan operations taking into account the NBC threat and the readiness of units for operations in an NBC environment.	Evaluated by hands-on performance and written exam at institutional course	Written/Oral/Performance exams at Command	Training task does not apply	CGIP using Written/Performance-based exams
Estimate the effects of wearing NBC IPE for an extended period of time and understand what measures can be taken to mitigate those effects on the combat effectiveness and well being of their forces.	Evaluated by hands-on performance and written exam at institutional course	Written/Oral/Performance exams at Command	Training task does not apply	CGIP using Written/Performance-based exams
Be familiar with the available medical prophylactic countermeasures.	Evaluated by O/C at the CTC	Written/Oral/Performance exams at Command	Training task does not apply	CGIP using Written/Performance-based exams
Be familiar with integration of NBC training in exercises.	Evaluated by O/C at the CTC	Written/Performance Exams NEC awarded	Training task does not apply	CGIP using Written/Performance-based exams

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* Much of the required commander's capabilities are developed by junior officers during pursuit of the Surface Warfare Office (SWO) Qualification; these are renewed at each new command. Additional Naval communities, including the Naval construction battalions (SeaBees), Naval expeditionary combat commands (NECCs), aviation squadrons, and other units, certify these skills locally at their own commands as required.

Table VII-6. Certification to Meet Survival and Unit Basic Operating Standards

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Take immediate and correct action upon warning of an imminent NBC attack or arrival of a CB agent or radiological fallout.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Self-assessment Annually	Annually**	CGIP using Written/ Performance-based exams
Determine the presence and nature of NBC hazards in the unit's area and take effective measures to mitigate, to the extent possible, the effects of an NBC attack.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Self-assessment Annually	Annually**	CGIP using Written/ Performance-based exams
Properly use unit NBC protective equipment and supplies and maintain them in a high state of serviceability and readiness.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Self-assessment Annually	Annually**	CGIP using Written/ Performance-based exams
Enforce a high order of health, hygiene, and sanitation to minimize the spread of disease following a biological attack.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Self-assessment Annually	Annually**	CGIP using Written/ Performance-based exams
Maintain a degree of protection appropriate to the risk while continuing to conduct the primary mission of the unit.	Hands-on performance during training events evaluated by Unit leadership	Self-assessment Annually	Annually**	CGIP using Written/ Performance-based exams
Perform necessary decon of supplies, equipment, and areas for which it is responsible in the performance of its primary duties.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	Self-assessment Annually	Annually**	CGIP using Written/ Performance-based exams
Delineate the areas of an NBC hazard.	Hands-on performance during training events evaluated by Unit leadership	Self-assessment Annually	Annually**	CGIP using Written/ Performance-based exams
Delineate contaminated areas and mark them by using standard signs.	Hands-on performance during training events evaluated by Unit leadership	Self-assessment Annually	Annually**	CGIP using Written/ Performance-based exams

Non-CBRN Personnel	Army	Navy*	Air Force	Marine Corps
Cross, bypass, or function in contaminated areas with minimum loss of efficiency, decontaminating where necessary.	Hands-on performance during training events evaluated by Unit leadership	Not taught (may not be considered applicable for many Naval applications)	Annually**	CGIP using Written/ Performance-based exams
Operate efficiently over an extended period of time (to be determined by the commander based on such factors as weather conditions and equipment specifications) with personnel in full protective equipment to include wearing the protective mask.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership	As applicable (may not be considered applicable for collectively protected environments)	Annually**	CGIP using Written/ Performance-based exams
Report nuclear detonations, CB attacks, and associated hazards, hazard areas, ROTAs.	Hands-on performance Training Leader or Unit leadership	Self-assessment Annually	Annually**	CGIP using Written/ Performance-based exams
Assign NBC personnel based on standards of proficiency outlined in paragraph C-3.	Evaluated by O/C at the CTC	Self-assessment Annually	3E9-series personnel only	CGIP using Written/ Performance-based exams

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* There is no formal surface unit training schools. Rather, each unit conducts an annual self-evaluated training scenario (chemical) to maintain unit level proficiency. Similarly, Seabees conduct an annual self-assessed training. NECCs, aviation squadrons and other units perform unit level training and self-assessments as dictated by mission.

** Through Air Force Emergency Management (EM) Program Installation Exercises.

Tables VII-7 through VII-12 provide similar details on the certification that is done to satisfy the education and training requirements for NCB Specialists (non-medical).

Table VII-7. NCB Specialist (non-medical) Certification to Meet Individual Standards of Proficiency

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Individual Protection				
Individuals should normally receive initial NBC-D training upon entering military service and receive refresher training at regular intervals thereafter.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Individual Survival Standards				
Recognize attacks with NBC munitions and take protective action.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Recognize NBC alarms and signals.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Recognize the existence of CBRN hazards and take protective action.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Properly don, seat, clear, and check the respirator/protective mask.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Properly don protective clothing. The individual must be able to relate the use of protective clothing to the graduated levels of the NBC threat.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Take protective measures against thermal radiation (light, flash, and heat), a blast wave, and radiation effects of nuclear explosions.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Carry out immediate individual decontamination.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Follow the procedures for the removal of NBC individual protective equipment.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Recognize if casualties are contaminated and perform first aid (self- & buddy-aid).	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Practice good personal health and hygiene as a protective measure against the spread of disease.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables VII-1 through VII-6.

** The Air Force Bioenvironmental Engineering community conducts certification via the Readiness Skills Verification Program vice the TQT program used by the EM community.

Table VII-8. NCB Specialist (non-medical) Certification to Meet Individual Basic Operating Standards of Proficiency

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Maintain NBC individual protective equipment (IPE) in a high state of serviceability at all times.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Be proficient in taking specific actions required for maintaining operating efficiency before, during, and after NBC attacks in order to reduce the effects of NBC weapons.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Recognize or detect NBC agent contamination and perform immediate decontamination of self, clothing, personal equipment, individual weapon, vehicle, and crew-served weapon.	Hands-on performance Evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Recognize all standard marking signs that indicate chemical, biological, or radiological contaminated areas.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Cross or bypass marked NBC contaminated areas with minimum danger to self.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Demonstrate proficiency in performing primary military duty—to include the use of crew/personal weapon(s)—while in the individual protective equipment for extended periods.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Be familiar with the procedures to be followed at the decontamination facilities of military service.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Be familiar with the principles of Collective Protection (CP), including entry and exit from CCAs and shelter organization and operation where applicable.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Demonstrate familiarity with the use of dosimetry devices and CB detection and monitoring equipment where applicable.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT (dosimetry is taught/evaluated by Bio-environmental Career Field)	Evaluated by written exam and hand-on performance at institutional course
Demonstrate the ability to perform the duties of an NBC observer.	Hands-on performance evaluated by Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables VII-1 through VII-6.

** The Air Force Bioenvironmental Engineering community conducts certification via the Readiness Skills Verification Program vice the TQT program used by the EM community.

Table VII-9. NCB Specialist (non-medical) Certification to Meet Basic Standards of Proficiency for Selected Personnel with Taskings Requiring Additional Training

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Personnel trained in NBC monitoring, survey, and reconnaissance				
Operate and maintain NBC equipment applicable to the task.	Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Recognize attacks with NBC munitions and fully understand unit procedures for implementing warnings and providing protection.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Detect and identify contamination and organize and conduct NBC monitoring and survey operations.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Monitor personnel, food, drinking water, and equipment for NBC contamination and effectiveness of decontamination measures.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Collect samples of suspected biological contamination and forward them as directed.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Collect samples of liquid or solid chemical agents.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Mark NBC contaminated areas, equipment, supplies, and stores with standard marking signs.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Provide data for compilation of NBC reports.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Organize and conduct NBC monitoring and surveying operations.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Operate detection and survey equipment for recognizing and detecting hazards from CBRN releases.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Personnel trained in contamination control				
Perform necessary decontamination of supplies, equipment, and areas for which they are responsible in the performance of their primary duties.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Operate and maintain assigned decontamination equipment.	Hands-on performance evaluated by Unit CBRN NCO		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Establish and operate a personnel decontamination station where applicable.	Hands-on performance evaluated by Unit CBRN NCO		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Take measures before an attack to prevent contamination and after an attack to avoid the spread of contamination.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Officers and NCOs			No EM NBC-D Officers	
Deployment of NBC observers and detection devices.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
NBC monitoring, survey, and reconnaissance.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Survival procedures before, during, and after an NBC attack or <i>friendly</i> nuclear strike.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
CBRN downwind hazards.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Radiation dose control, exposure rules, and record keeping.	Evaluated by written exam at institutional Course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
General protective values of material against radiation, including the selection of buildings and the construction of shelters.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Contamination control procedures for the permanent or temporary prevention, reduction, or neutralization of contamination for maintaining or strengthening an efficient conduct of operations.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional course TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables VII-1 through VII-6.

** The Air Force Bioenvironmental Engineering community conducts certification via the Readiness Skills Verification Program vice the TQT program used by the EM community.

Table VII-10. NCB Specialist (non-medical) Certification to Meet Basic Standards of Proficiency for Selected Personnel Requiring Additional Training

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Command NBC-D officers and enlisted personnel in cooperation with the functional groups of the staff			No EM NBC-D Officers	
Assist the commander in providing policy and guidance to lower echelons in all matters pertaining to the development of an NBC-D capability.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Plan, conduct, and monitor NBC-D training within the command.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Evaluate the capability of lower echelons to survive an NBC attack and to continue operations in an NBC environment.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Keep abreast of new TTP in NBC defense.	Evaluated by O/C at the CTC		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Act in the capacity of an advisor to the commander on all matters pertaining to the NBC-D of subordinate units/formations. When augmented, be responsible for the NBCWRS.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Recommend employment of special NBC-D elements/units, if available.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Operate and use automated systems for calculations and data processing where appropriate. If an automated system is not available, personnel in NBC centers must be able to perform the same tasks manually.	Evaluated by hands-on performance and written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Act as an advisor to the commander on all matters pertaining to cooperation in NBC-D with units/agencies of other nations.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Unit NBC-D officers and enlisted personnel (assisted by enlisted alternates) (Air Force EMs have no NBC-D officers)				
Provide technical assistance to the commanders and staff on NBC-D training and operations.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Coordinate the unit's NBC-D activities.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Provide NBC-D training to achieve basic operating standards of proficiency for the unit, the individuals of the unit.	Evaluated by O/C at the CTC		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Plan and supervise NBC-D training aspects of operational training exercises and maneuvers.	Evaluated by O/C at the CTC		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Supervise preparation of unit NBC-D SOPs and adapt them to existing plans of other units as required.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Supervise operations and maintenance of NBC material.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Determine by dosimetry or by calculation (as appropriate) the total dose and time of stay in and/or transit through radiological contaminated areas to avoid exceeding command exposure guidance.	Evaluated by written exam at institutional course		Dosimetry is taught/evaluated by Bio-environmental Career Field	Evaluated by written exam and hand-on performance at institutional course
Prepare fallout prediction patterns and perform the tasks of the NBCWRS(may be assigned to meteorological, operational, and/or navigational officers).	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Plan NBC reconnaissance and advise commanders on the best routes to cross or bypass an NBC contaminated area.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Plan and coordinate decontamination within the unit and advise the commander.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Maintain records of the unit's radiation exposure.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Estimate downwind hazard for chemical attacks.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Report NBC data to next higher Headquarters and perform the NBC reporting and warning tasks.	Evaluated by written exam at institutional Course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Evaluate individual and unit competence in NBC-D and advise the commander on the unit's ability to survive and to continue operations in an NBC environment.	Evaluated by O/C at the CTC		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Operate and use data processing devices and possess basic knowledge of the structure of programs used in NBC warning and reporting where appropriate.	Evaluated by hands-on performance and written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Additionally, all NBC-D officers/NCOs (Air Force has no NCB=D officers)				
Identify the hazards related to risks of Low Level Radiation (LLR), release other than attack (ROTA), and Toxic Industrial Materials (TIM).	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Make contingency plans for units facing LLR, ROTA, and TIM hazards.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Act as an advisor to the commander on all matters pertaining to LLR, ROTA, and TIM hazards.	Evaluated by written exam at institutional course		Evaluated by written exam and hand-on performance at institutional crs TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables VII-1 through VII-6.

** The Air Force Bioenvironmental Engineering community conducts certification via the Readiness Skills Verification Program vice the TQT program used by the EM community.

Table VII-11. NCB Specialist (non-medical) Certification to Meet Basic Standards of Proficiency for Commanders

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Understand the principles of NBC-D.	Evaluated by written exam at institutional course		N/A (Air Force does not have EM CBRN-D Commanders)	Evaluated by written exam and hand-on performance at institutional crs
Know the defense organization and the NBCDE available.	Evaluated by written exam at institutional course		N/A (Air Force does not have EM CBRN-D Commanders)	Evaluated by written exam and hand-on performance at institutional course
Assess the capabilities of the NBC-D forces under their command.	Hands-on performance during training events evaluated by Unit leadership		N/A (Air Force does not have EM CBRN-D Commanders)	Evaluated by written exam and hand-on performance at institutional course
Assess the effects of NBC munitions on unit/formation, especially on operations to be conducted.	Evaluated by written exam at institutional course		N/A (Air Force does not have EM CBRN-D Commanders)	Evaluated by written exam and hand-on performance at institutional course
Issue orders and take measures depending on situation and mission.	Evaluated by written exam at institutional course		N/A (Air Force does not have EM CBRN-D Commanders)	Evaluated by written exam and hand-on performance at institutional course
Plan operations taking into account the NBC threat and the readiness of units for operations in an NBC environment.	Evaluated by hands-on performance and written exam at institutional course		N/A (Air Force does not have EM CBRN-D Commanders)	Evaluated by written exam and hand-on performance at institutional course
Estimate the effects of wearing NBC IPE for an extended period of time and understand what measures can be taken to mitigate those effects on the combat effectiveness and well being of their forces.	Evaluated by hands-on performance and written exam at institutional course		N/A (Air Force does not have EM CBRN-D Commanders)	Evaluated by written exam and hand-on performance at institutional course
Be familiar with the available medical prophylactic countermeasures.	Evaluated by O/C at the CTC		N/A (Air Force does not have EM CBRN-D Commanders)	Evaluated by written exam and hand-on performance at institutional course
Be familiar with integration of NBC training in exercises.	Evaluated by O/C at the CTC		N/A (Air Force does not have EM CBRN-D Commanders)	Evaluated by written exam and hand-on performance at institutional course

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables VII-1 through VII-6.

** The Air Force Bioenvironmental Engineering community conducts certification via the Readiness Skills Verification Program vice the TQT program used by the EM community.

Table VII-12. NCB Specialist (non-medical) Certification to Meet Survival and Unit Basic Operating Standards

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Take immediate and correct action upon warning of an imminent NBC attack or arrival of a CB agent or radiological fallout.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Determine the presence and nature of NBC hazards in the unit's area and take effective measures to mitigate, to the extent possible, the effects of an NBC attack.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Properly use unit NBC protective equipment and supplies and maintain them in a high state of serviceability and readiness.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Enforce a high order of health, hygiene, and sanitation to minimize the spread of disease following a biological attack.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Maintain a degree of protection appropriate to the risk while continuing to conduct the primary mission of the unit.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Perform necessary decon of supplies, equipment, and areas for which it is responsible in the performance of its primary duties.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Delineate the areas of an NBC hazard.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Delineate contaminated areas and mark them by using standard signs.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Cross, bypass, or function in contaminated areas with minimum loss of efficiency, decontaminating where necessary.	Hands-on performance during training events evaluated by Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

CBRN Personnel	Army	Navy*	Air Force**	Marine Corps
Operate efficiently over an extended period of time (to be determined by the commander based on such factors as weather conditions and equipment specifications) with personnel in full protective equipment to include wearing the protective mask.	Hands-on performance evaluated by Drill Instructor, Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Report nuclear detonations, CB attacks, and associated hazards, hazard areas, ROTAs.	Hands-on performance Training Leader or Unit leadership		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course
Assign NBC personnel based on standards of proficiency outlined in paragraph C-3.	Evaluated by O/C at the CTC		Evaluated by written exam and hand-on performance at institutional course/TQT/EET/OJT	Evaluated by written exam and hand-on performance at institutional course

NOTE: The green indicates that there is education or training associated with the proficiency skill. The blocks that are green but have no identified certification may be gaps. In some cases (e.g., good hygiene) certification may not be required.

* The Navy does not have a dedicated NCB Specialist (non-medical) career field. The requirements for Naval personnel who received specialized NCB training in preparation for a collateral duty assignment are noted in Tables VII-1 through VII-6.

** The Air Force Bioenvironmental Engineering community conducts certification via the Readiness Skills Verification Program vice the TQT program used by the EM community.

A. ARMY CERTIFICATION

The U.S. Army Training and Doctrine Command (TRADOC) has established quality control policy to guarantee the effectiveness of Army training. *TRADOC Regulation 350-70* identifies the standards associated with the Army's Systems Approach to Training.

Commander's evaluations are local tests or assessments of soldier performance of MOS-specific and common tasks critical to the unit mission. The Army uses the external evaluation (EXEVAL) to assess a unit's ability to perform its mission. Units may modify this evaluation based on the mission, equipment, troops, terrain, and time available and civilian (METT-TC) considerations and other considerations as deemed appropriate by the commander. Selected Training and Evaluation Outlines (T&EOs) that involve the total unit and employ a realistic opposing force (OPFOR) are used for the evaluation. At the completion of the evaluation, the commander can identify the unit strengths and weaknesses. These strengths and weakness are the basis for future training and resource allocations.

B. NAVY CERTIFICATION

The Personnel Qualification Standard (PQS) program is a qualification system used by officers and enlisted personnel to obtain a minimum level of competency required to perform specific duties. A PQS is a compilation of the minimum knowledge and skills that an individual must demonstrate in order to qualify to stand watches or perform other specific routine duties necessary for the safety, security, or proper operation of a ship, aircraft, or support system. The objective of PQS is to standardize these qualifications and facilitate their achievement.¹⁶⁶

The Navy has no dedicated career path in the NCB field, nor does it operate specialized NCB units. NCB team personnel are drawn from existing job specialties. Navy NCB is a collateral duty of the Damage Control, or DC, rating. The DC personnel are the Navy enlisted subject-matter experts in NCB. These sailors take additional coursework and complete additional advanced PQS. Officers who have NCB-designated collateral duty are required to complete the Surface Warfare Officer School (SWOS) and Damage Control Assistant (DCA) courses prior to assuming this duty; enlisted sailors may also be assigned to the DCA course. There is no formal certification process; sailors are only required to complete the training and receive a passing grade on the course examinations.

In addition, they are required to complete the portion of the PQS that relates to their NCB job description. The sailor receives hands-on training and, upon completing it, is required to take the written test. Areas where the sailor shows signs of weakness are retrained and retested until the sailor receives a status of “Passed.”. Upon passing the written portion of the test, the sailor attends an oral board. Only after successful completion of the oral board will the Sailor be allowed to execute assigned NCB duties.¹⁶⁷

All sailors assigned to an afloat command are required to complete the basic CBR requirements—“CBR-D fundamentals – Watchstation 106” and “Basic CBR-D – Watchstation 306”, which covers such topics as recognizing CBR agents, signs, and symptoms; use of protective equipment; and administering self-aid.

¹⁶⁶ US Navy, Naval Education and Training Command. Navy Education and Training NAVEDTRA 43119-I, *Personnel Qualification Standards for Damage Control*. Pensacola, FL: April 2006, p. 4.

¹⁶⁷ Chief Gerald Miller, Conversations with the authors, 9 April 2007.

C. AIR FORCE CERTIFICATION

1. Individual NBC Defense Certification

Enlisted personnel attending Air Force Basic Military Training School (BMTS) will receive initial certification for chemical, biological, radiological, nuclear, and (high yield) explosives (CBRNE) defense during Warrior Week Training. Air Force Officers will receive credit for initial CBRNE Defense training after attending the CBRNE Defense Course.¹⁶⁸ Similarly, NCB Specialists will receive certification through written and hands-on testing during courses. NCB specialists also develop formal certifications, including Occupational Safety and Health Agency and Environmental Protection Agency certifications while at the schools.

Once at their units, Emergency Management personnel certification is maintained through task qualification training (TQT) and on-the-job training. Bioenvironmental Engineering and Medical Laboratory individual certification is maintained through the Readiness Skills Verification Program (RSVP), which involves demonstration of capabilities through exercises and training conducted at 20 month intervals.

2. Unit Training and Exercise Evaluation

The Air Force uses exercises to enhance and improve readiness; evaluate and reinforce consequence management capabilities; validate plans, policies, procedures, processes, and doctrine; and ensure readiness compliance.

In order to measure the Emergency Management (EM) Program's effectiveness, the Air Force has an installation exercise and evaluation program designed to provide the Installation Commander a means to plan and conduct realistic, integrated exercises and training for all installation personnel. The Air Force uses a Remedial Action Program to ensure the tracking and resolution of significant problems identified during installation exercises.¹⁶⁹ The EM Program has 12 types of exercises, most of which are conducted annually.

The Air Force uses Operation Readiness Exercises (ORE) to evaluate and measure the ability of units with a wartime contingency or force sustainment mission to perform assigned operational missions, including in-place and deployed missions. Units

¹⁶⁸ U.S. Air Force. *Air Force Instruction AFI 10-2501, Air Force Emergency Management (EM) Program, Planning and Operations*. Tyndall Air Force Base, FL: 24 January 2007, p. 70.

¹⁶⁹ Ibid., p. 83.

in CBRNE low-threat areas (LTAs) are required to conduct OREs annually; units in or deployed to CBRNE high-threat areas (HTAs), quarterly.

The Air National Guard is authorized two tabletop exercises annually, with key player involvement. All units deployed to a CBRNE high- or medium-threat area (MTA) are evaluated annually. Units with a wartime or contingency mission will be evaluated in four major graded areas: initial response, employment, mission support, and the ability to survive and operate in a hostile environment, as described in *AFI 90-201, Inspector General Activities*.

3. Capability Assessment

Reporting EM capabilities, to include incident response, on a routine basis is required by the Air Force. Installation Commanders use monthly Status of Resources and Training System (SORTS) reports and annual Radiological Response Capability Reports to report the installation's overall capability to respond to the installation deployment mission or support a radiological response.¹⁷⁰ Commanders at all levels are required to use measurement tools for assessing the strength and effectiveness of their program. SORTS is designed to provide reports through continuous monitoring of changes in the overall unit level, resource category levels, and unit locations. Units report this data at least every 30 days or when changes affect the unit's overall rating. To obtain the resources necessary for successful mission accomplishment, personnel at every level report the program status with specific justifications.

D. MARINE CORPS CERTIFICATION

1. Individual CBRN Defense Certification

The Marine Corps Common Skills (MCCS) Sustainment Training is the annual training and evaluation of common skills, capabilities and tasks within a unit's training program. All units, both in the operating forces and supporting establishment, are required to complete MCCS training and a skills-based performance evaluation, general military skills (GMS) exam, or a combination of both, annually. All Marines conduct sustainment training and are evaluated annually on their mastery of common skills.¹⁷¹

¹⁷⁰ Ibid., p. 84.

¹⁷¹ US Marine Corps, Commandant of the Marine Corps. *Marine Corps Order MCO 1510.121A, Marine Corps Common Skills (MCCS) Program*. 1 October 2004, p. 3-4.

The GMS “testing and evaluation will be accomplished through use of the MCI [Marine Corps Institute] test booklet. The test may be administered in a written or skills-based performance format. A minimum score of 80% is required to demonstrate mastery of the GMS test. Marines who fail the test will be provided remedial instruction in those areas found deficient and retested until they demonstrate mastery in the areas of deficiency.”¹⁷² The test scores are reported to the Marine Corps Total Force System (MCTFS). These results provide the commander with the ability to retrieve data and information on the Marines assigned to their commands. The GMS test scores are considered when assigning proficiency marks for corporals and below, and in fitness reports for sergeants and above.

The USMC sees evaluation as a continuous process and considers it integral to training management. Evaluations are conducted by leaders at every level and during all phases of the planning and conduct of training. Training evaluations are used to measure individual and collective ability to perform events specified in the Training and Readiness Manual. To ensure NCB training is efficient and effective, evaluation must be an integral part of the training plan.¹⁷³

2. Unit CBRN Defense Certification

To ensure compliance with regulations and policy, the USMC has an inspection program in place. The Inspector General for the Marine Corps, in accordance with *MCO 5040.6G*, inspects selected units at designated intervals.¹⁷⁴ The command/unit is designated mission capable or non-mission capable. A follow-up inspection determines if a command/unit has corrected deficiencies identified during a previous inspection.

The CBRN defense readiness falls under functional area 930 and includes the tasks from the CBRN-D (Individual) Readiness Checklist (Table VII-13).

¹⁷² Ibid., p. 3-4.

¹⁷³ US Marine Corps, Commandant of the Marine Corps. *Marine Corps Order MCO 5040.6H, Marine Corps Readiness Inspections and Assessments*. 18 March 2007, p. 1.

¹⁷⁴ Ibid., p. 1-14.

Table VII-13. CBRN-D (Individual) Readiness Checklist

Task	Description
930 01 001	Does the unit have Desktop Procedures for CBRN Defense training that explains, at a minimum, how to set-up, conduct and report training?
930 01 002	Have all unit personnel conducted annual calendar year (CY) ISS training?
930 01 003	Have all unit personnel conducted annual a CY IPE Confidence Exercise?
930 01 004	Does the CBRN section maintain current ITS or the current T&R Manual for MOS 5702/5711 and has training been established in accordance with those standards?
930 01 005	Has the unit and unit's personnel received annual CY, Basic Operating Standards training?
930 01 006	Does the unit train to its Mission Essential Tasks in a simulated CBRN environment, annually CY?
930 01 007	Does the unit conduct Mission Oriented Protective Posture (MOPP) Familiarization Training for all personnel semi- annually CY?
930 01 008	Do unit personnel fire with their field protective mask when conducting rifle re-qualification?
930 01 009	Does the unit have sufficient trained personnel to perform detection and decontamination operations, dependent upon unit size and mission, as outlined in MCWP 3-37 MAGTF CBRN Defense Operations and MCWP 3-37.3 CBRN Decontamination?
930 01 010	Are current Mask Types and Mask Sizes entered into MCTFS in a timely manner?
930 01 011	Is CBRN training identified and scheduled in the Long, Mid, and Short range training plans?
930 01 012	At least 90% of the personnel within the unit that are assigned a crew served weapon has fired their crew served weapon wearing the appropriate field protective mask within the last annual period (calendar year).
930 01 013	Has the unit fully integrated CBRND training into every combat support, combat service support, or command and control exercise during offensive and defensive operations, to include live fire evolutions (i.e. Mojave Viper)?
930 01 014	Are informal and formal evaluations conducted for all CBRN training i.e. After Action Review (AAR) and or After Action Reports?

Source: U.S. Marine Corps Headquarters. AIRS Detailed Inspections Checklist, http://hqinet001.hqmc.usmc.mil/ig/Div_Inspections/AIRS%20Checklist/AIRS%20MONTHLY%20UPDATE/Checklist930.txt

E. NCB MEDICAL EDUCATION AND TRAINING CERTIFICATION

“Certification” is defined as the methods and processes used by Services and subordinate commands for education and training that validates Service members are competent to operate in an NCB environment. Generally, the term “certification” refers either to the validation that a course meets certain standards or to the completion of a course of instruction by an individual. Individual “competency,” on the other hand, refers to the education and training metrics used to affirm the student has met the standardized requirement to properly perform a specific job. For medical NCB education and training, we will use the terms “certification” and “competency” interchangeably.

The December 2002 Defense Medical Readiness Training Institute (DMRTI) report identified four areas that weaken the training program’s effectiveness: (1) competing mission requirements of the Services, (2) field requirements (war-time) versus fixed-facility (homeland defense), (3) skills/knowledge level of personnel available to

conduct/oversee CBRN training, and (4) conflicting schedule requirements (patient care, training, meetings, etc.).¹⁷⁵

In 2004, the Services, having selected the on-line, distance learning strategy utilizing the Navy's Emergency Medical Preparedness & Response Course (EMPRC), began implementing the initial and sustainment levels of the Tri-Service CBRN Training Program.¹⁷⁶ This CBRN training was made mandatory for all medical personnel (Active and Reserve components, civil service, and contract) throughout the Department of Defense.

In the 2007 "Revised Tri-Service Chemical, Biological, Radiological, Nuclear, and (High-Yield) Explosives (CBRNE) Medical Training Program," DMRTI presented the Tri-Service CBRN Medical Training Continuum, which outlined "the levels of training, targeted audience, Standards of Proficiency, and courses" that fulfill the requirements. The specific courses were cross-referenced with the Standards of Proficiency to ensure they meet the minimum requirements for compliance. The original DMRTI Standards of Proficiency Initial and Sustainment Training Levels were consolidated into a single level, Core Knowledge, and the second level, Advanced Knowledge, was redefined. Both levels of knowledge, defined in Exhibit VII-1, utilize education and training to meet the requirements.¹⁷⁷

¹⁷⁵ Defense Medical Readiness Training Institute (DMRTI). *Cross Service Identification of Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives (CBRNE) Training Commonalities and GAP Analysis Report*. Fort Sam Houston, TX: 10 December 2002.

¹⁷⁶ US Navy. Bureau of Medicine and Surgery. *DOD CBRNE Training – Instructions: Emergency Medical Preparedness and Response Course (EMPRC)*. 20 October 2004.

¹⁷⁷ DMRTI. *Revised Tri-Service Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives (CBRNE) Medical Training Program*. 29 May 2007.

DMRTI Standards of Proficiency Training Levels

Core Knowledge: Core Knowledge level provides the necessary education and training to enhance the proficiency of individual and unit/platform skills. This is a level of subject and task knowledge applicable to all personnel assigned to the Military Healthcare System (MHS). This level can be completed through various education and training courses from awareness training to sustainment education and training.

Advanced Knowledge: Advanced level is specific training designed for a service specific target audience of personnel who require an expert level knowledge and abilities. This level can be completed through various education and training courses such as those at Appendix E that enable personnel to perform specific skills/tasks, and results in specific capabilities at the unit/MTF and/or installation. Services must identify positions and/or personnel who require Advanced Knowledge training and ensure that the personnel receive the required training.

Source: DMRTI. *Revised Tri-Service CBRNE Medical Training Program*, 29 May 2007, p.2.

Exhibit VII-1. DMRTI Standards of Proficiency Initial and Sustainment Training Levels

All Services and Joint course validation and certification processes require the course to be measured against the Standards of Proficiency as established through The Joint Staff Action Process (JSAP) procedure. The new 2007 DMRTI Standards of Proficiency were developed based on the Universal Joint Task List (UJTL) and influenced by the Department of Homeland Security (DHS) Universal Task List (UTL) in consultation with the Tri-Service CBRN Training Committee (TCTC) and 43 subject-matter experts (SMEs) throughout the Department of Defense (DoD). This process resulted in overwhelming approval from the Services and the combatant commanders to use specific Standards of Proficiency to certify/validate NCB courses. Prior to this memorandum, no Joint or Service standardization existed for NCB medical education and training throughout DoD. The Tri-Service CBRN Standards of Proficiency were mapped to the validated NCB medical training courses, UJTIs, and Health Service Support doctrine in Appendix E.

The Standards of Proficiency identify what Services need to do to prevent, protect against, respond to, and recover from an NCB threat. The 430 Standards of Proficiency include Core Knowledge, encompassing all levels and disciplines, from non-medical, non-security, non-military personnel to military medical/healthcare professionals (physicians, nurses, etc.). Sustainment training is specified to occur every three years. This training is projected to start in FY08. Appendix E reflects a cross-walk of the Standards of Proficiency to the medical CBRN requirements, as reflected in the UJTL.

All military, civilian, and contract personnel must complete the required initial CBRN training before the end of FY 07. All military, civilian, and contract personnel will

begin sustainment training in FY08 and will be required to complete the sustainment training every three years.

DMRTI will re-validate courses every three years, or when major changes have been made to the curriculum, to ensure that the courses remain compliant. DMRTI will accept additional course(s) for review for compliance and possible incorporation into the life-cycle training continuum.

The current certification process (or measurement for competencies) for specific CBRN medical and education courses varies. The process includes course completion, pre- and post-test on course objectives, demonstrating capability to do a required task, and awarding of professional medical continuing education units (CME/CEU, contact hours, etc). Certificates of completion were often documented as evidence of competency.

Military Occupational Specialties (MOS), Navy Ratings or Navy Enlisted Classifications (NEC), and Air Force Specialty Codes (AFSC) that require national certification were reported as another process for identifying certification. For example, a 68S Preventive Medicine Specialist may be certified by the National Environmental Health Association as a Registered Environmental Health Specialist/Registered Sanitarian. Requirements of that certification process include the ability to conduct epidemiological investigations.

Members of specific NCB medical teams such as U.S. Army Special Medical Augmentation Response Teams (SMART), CBRN Rapid Response Teams (RRT), and the medical elements of the National Guard Civil Support Teams (CSTs) are required by position or medical specialty to complete training and maintain certification with their respective organization. These requirements were identified as credentials in competency. These teams and their training are included in the DMRTI validation process of Standards of Proficiency.

It was also reported that attending an exercise resulted in a certificate of participation which was also identified as an indication of competency. Varying levels of participation, however, could result in the same certificate being issued to all participants. No measure of proficiency was identified in exercise participation. Exercise programs like the Disaster Preparedness, Vulnerability Analysis, Training and Exercise (DVATEX), which had a pre-exercise assessment and post-exercise review, provide a matrix for assessing improvement in the overall capability of the organization. We found no reports to indicate individual performance assessment in exercises.

Organizational medical facilities are also subject to certification. Questions arose as to Military Treatment Facility (MTF) NCB certification; if the MTF is Joint Commission certified, is it considered to be NCB capable due to the requirement to exercise an NCB scenario? No metrics to measure specific capability were found at the institutional level.

Finally, experience was often cited as supporting competency. Service members who responded to Katrina were often identified as “experts” in emergency response with no metric to determine competency.

The 2007 revised Tri-Service CBRN Medical Training Program continues to demonstrate dedication to the objective of training all DoD medical personnel (military, civilian, and contractors) and to ensure personnel are competent to respond to an NCB event within their medical fields of expertise.

As previously discussed, the DMRTI Tri-Service CBRN Education and Training Program has developed validated Standards of Proficiency along with embedded evaluation tools (e.g., tests) to ensure that participants who have successfully completed all of a course’s modules are competent to operate in an NCB environment. The assumption here is that an individual who takes of the minimum requirement of the seven approved courses that map out the DMRTI Standards of Proficiency and passes the evaluation tool (test, write a paper, pass the course) has received certification at the Core Knowledge level.

As DMRTI continues to develop the Tri-Service CBRN Medical Training Program, including the future development of the Advanced CBRN Medical Training standards, “personnel in key response roles will be trained to perform specialized skills needed for effective response to CBRN incidents, wherever they occur.”¹⁷⁸

The study team was unable to review of the certification metrics for all other, non-validated NCB medical education and training courses used to ensure that education and/or training has been provided.

¹⁷⁸ DMRTI Revised CBRNE Medical Training Program, p. 7.

F. CERTIFICATION GAPS AND RECOMMENDATIONS

Gap: While certification processes exist, concerns remain regarding whether unit and collective assessments of training and exercises are conducted under realistic conditions.

Even though the Services use several methods to assess and certify successful demonstration of NCB passive defense standards of proficiency by individual personnel, teams, and units, the issue of realism for unit-based training has been a recurring criticism of the program and, in the course of this effort, we could not identify any changes in this issue. Studies have indicated that the conditions are not realistic, either as a result of time, environment, simulation, operations, etc. For example, one Service told the Government Accountability Office (GAO) that NCB exercises were not conducted because “operating in protective equipment is difficult and time-consuming and this (1) decreases the number of combat essential tasks that can be performed during an exercise and (2) limits offensive combat operations.”¹⁷⁹ A second study noted that training conducted for soldiers and Marines at national training centers prior to deployment included limited or no training for Service members in full personal protective equipment.¹⁸⁰ Other problems included intentional improper use of protective gear during exercises to minimize the limitations imposed by equipment; restricted training with simulants due to low levels of unit preparations; and lack of a requirement for demonstrated NCB passive defense skills at the training centers. The study team cites this gap based on documentation in government and military reports, but we were unable to assess it in detail.

Recommendation: The Services should place increased emphasis on realistic NCB unit training and exercise certification and assessment.

Realistic training and exercises utilize feasible scenarios which allow for the realistic demonstration of NCB passive defense skills including but not limited to the use of protective, detection, monitoring, and decontamination equipment; application of

¹⁷⁹ Government Accountability Office. Report Number GAO-01-27, *CHEMICAL AND BIOLOGICAL DEFENSE: Units Better Equipped, but Training and Readiness Reporting Problems Remain. Report to the Chairman, Committee on Armed Services, House of Representatives*, Washington DC, November 2000.

¹⁸⁰ Government Accountability Office. Report Number GAO-05-8, *CHEMICAL AND BIOLOGICAL DEFENSE: Army and Marine Corps need to Establish Minimum Training Task and Improved Reporting for Combat Training Centers. Report to the Chairman, Subcommittee on National Security, Emerging Threats and International Relations, Committee on Government Reform, House of Representatives*, Washington DC, January 2005.

concepts of operations and plans; and medical diagnosis, triage, treatment and other procedures.

Gap: Integration, standards, certification, and governance of NCB medical education efforts in DOD and the Services are fragmented and incomplete.

Although there are many medical and non-medical courses with NCB content available, they are not standardized, most are not approved as meeting DMRTI standards, and there is no career life-cycle approach to NCB medical education for certain medical care providers and specialties. With a few exceptions, the governance and management of such education efforts is poorly integrated, and the certification and tracking of military healthcare providers in the Services for ability to diagnose and treat NCB casualties is almost entirely lacking above a basic level of training and education. In spite of a 2001 GAO report criticizing the DoD NCB medical education efforts, only the requirements for the most basic level of medical education in NCB casualty management have been addressed by DoD or the military Services.

Recommendation: The Services should establish certification and tracking of military healthcare providers for advanced NCB medical training and education.

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VIII. SUMMARY OF IDENTIFIED GAPS, OBSERVATIONS AND RECOMMENDATIONS

Joint Publication (JP) 3-11, Army Field Manual (FM) 3-11,¹⁸¹ and many additional nuclear, chemical, and biological (NCB) Joint, multi-Service and Service doctrine publications, field manuals and other documents outline a common set of skills and capabilities—basic standards of proficiency—that all Service members must meet in order to be considered prepared to accomplish a military mission requiring NCB passive defense. The documents also establish additional standards for personnel filling additional non-specialist roles in the NCB passive defense realm, including advisory personnel, officers, noncommissioned officers (NCOs), and unit commanders. These documents do not, however, specifically mention the training, education, and the means to develop the skills they outline. Development of these standards of proficiency is the responsibility of the individual Services, and in the medical realm this varies slightly.

Several multi-Service and Service documents addressing medical NCB exist; however, the current standards of proficiency for the NCB specialist (medical) are outlined in a Department of Defense (DoD) memorandum.¹⁸² This memorandum promulgates (1) the Defense Medical Readiness Training Institute (DMRTI) Tri-Service Chemical, Biological, Radiological, and Nuclear and (High-Yield) Explosives (CBRNE) Medical Training Program and (2) the Standards of Proficiency, which establishes requirements and facilitates centralization, coordination, and certification of medical CBRN education and training.

It is important to note that the NCB passive defense training and education doctrine and requirements at the Joint and multi-Service level, for the most part, identify capabilities, skills and standards of proficiency and only imply the requirement for education and training to develop these. U.S. Code, Title X, gives the Services, via the Service Secretaries, the overall responsibility for conducting training to meet the doctrine and requirements.

¹⁸¹ FM 3-11 is the Army field manual designation for *Multi-Service Tactics, Techniques and Procedures (TTPs) for NBC Defense Operations*. The other Service designations for this manual are: *Marine Corps Warfighting Publication (MCWP) 3-37.1*, *Naval Warfare Publication (NWP) 3-11*, and *Air Force Tactics, Techniques and Procedures (Instruction) (AFTTP (I)) 3-2.42*.

¹⁸² E. C. Aldridge, Jr. Undersecretary of Defense for Acquisition, Transfer, and Logistics. Implementation Plan for the Management of the Chemical Biological Defense Program (CBDP). Memorandum. Washington DC: 22 April 2003

For both non-medical and medical NCB realms, passive defense predominantly comprises the practical skills that individual Service members and NCB Specialists, both non-medical and medical, need to develop to ensure that the vulnerability to and effects of an NCB hazard employed against U.S. forces are mitigated or negated. This is the first and perhaps the most important observation resulting from this study – *NCB passive defense is predominantly about the development of practical skills*. The required skills, capabilities, and proficiencies may vary with the individual and Service, and the methods employed in the development of those skills do vary by Service.

This study began with four questions. The questions and the study's general answers to them are below.

1. What are the Joint and Service doctrines for CBRN education and training?

The Joint and Service doctrine, as well as Service requirements, are the skills and capabilities that each Service member or unit must establish to minimize or negate the effects of the hostile use of NCB. Although they are too numerous to discuss here in detail, they are outlined in Chapter 5. The doctrine and requirements appear to be complete, but there are minor gaps.

2. Do the Services' education and training objectives meet the requirements as set forth in the Joint and Service doctrines?

The Services generally met the requirements placed on them by Joint, multi-Service and Service specific doctrine, with one notable exception. Naval doctrine and requirements appear to omit certain aspects of Joint doctrine and multi-Service tactics, techniques, and procedures (TTPs).

3. Are schools, classes, practicals, drills, and exercises employed by the Services to ensure that CBRN education and training requirements are met?

All the Services have implemented processes to meet their own requirements. Education and training are discussed in Chapter 6. While there appears to be a coherent link implementing doctrine through education and training for individuals and NCB Specialist (non-medical), the links between NCB medical doctrine and the associated education and training are less clear.

4. Does each Service assess Service member performance in CBRN environments under realistic conditions through tests, inspections, evaluations and exercises?

All the Services use multiple methods to assess the performance of individual personnel, teams and units. The issue of realism for unit based training has been a recurring criticism of the program and, due to study limitations, we could not identify any changes in this issue.

Utilizing these questions as a framework, the study team identified a number of NCB passive defense doctrine, education, training, and certification alignment gaps and made several observations. Gaps recognize areas where there is something clearly missing—for example, an area of doctrine that should be included but is not, or a requirement that is not specified for a class that already exists – that needs to be rectified. Observations are additional study findings that identify things noted within the context of the study that are worthy of mention and for which changes might improve the overall accomplishment of the passive defense military mission area. The major gaps, observations, and associated recommendations follow. The gaps, observations, and recommendations noted here are those highlighted by the study team, study advisors, and subject matter experts and include a consolidation of those discussed throughout the study. Additional study findings are identified in Appendixes D and E.

After completing the draft report, study team was asked to prioritize the gaps identified in the report. Within the team, we could not reach a consensus on prioritization and did not have the time and resources to conduct an analytical prioritization. Additionally, to conduct such an analysis properly, Service and other agency participation are required.

A. STATUS OF NCB PASSIVE DEFENSE EDUCATION AND TRAINING

Observation: NCB education and training are provided in accordance with the Joint and Service doctrine and certified through methods established by the Services. The study team was unable to determine the specific status of NCB passive defense education and training for the Reserve and the National Guard components.

Based on information provided by Service subject-matter experts (SMEs), including those conducting Service training at the United States Army Chemical School at Fort Leonard Wood and at other Service and Joint education and training organizations,¹⁸³ the Services have established requirements corresponding to the Joint, multi-Service, and Service doctrine. These requirements are met through education and

¹⁸³ Public Law 103-160, National Defense Authorization Act for Fiscal Year 1994, required that the Secretary of Defense “consolidate all chemical and biological warfare defense training activities of the Department of Defense at the United States Army Chemical School.” In response, all four Services established detachments at the Chemical Defense Training Facility, United States Army Chemical School, Fort Leonard Wood. Although much of the specialty education and training for NCB Specialists (non-medical) has been consolidated at the Chemical School as per the legislation, other military schools, research organizations, and training centers—the Army Medical Department (AMEDD) Center and School and the Defense Nuclear Weapons School, among others—and civilian organizations also provide NCB passive defense education and training to military personnel.

training provided in initial accession programs, military and civilian schools and training programs, and locally at units, then certified through a variety of methods including exams; practicals; Tactics, Techniques, and Procedures (TTPs); Personnel Qualification Standards (PQS); and other methods.

Recent studies have indicated that the Reserve and National Guard components may not be receiving NCB education and training in accordance with established requirements. The requirement exists for these units to be trained to the basic standards of proficiency, but the current status of that training remains unclear.¹⁸⁴

Recommendation: The Services should ensure passive defense education and training requirements are enforced uniformly across the Active and Reserve components and the National Guard.

Further assessment by the Services is required to verify that Reserve and National Guard units are conducting education and training to ensure the necessary and required capabilities, skills and standards of NCB passive defense proficiency are acquired.

B. JOINT AND SERVICE DOCTRINES FOR NCB PASSIVE DEFENSE EDUCATION AND TRAINING

Gap: General doctrine lag and classification restrictions prevent the consideration of advanced NCB threats and hazards in NCB passive defense education and training.

As noted previously, the Services establish NCB passive defense education and training in accordance with doctrine and requirements, to ensure that Service members develop the required basic NCB passive defense standards of proficiency, skills and capabilities. In the course of the study, however, certain gaps in existing doctrine became clear.

General doctrine lag: Doctrine is reviewed and updated on a multi-year cycle. For example, the Army doctrine is reviewed and updated on a three-year cycle. The other Services may take longer or shorter, depending on the Service, current operations,

¹⁸⁴ Government Accountability Office. *Report Number GAO-07-143, CHEMICAL AND BIOLOGICAL DEFENSE: Management Actions Are Needed to Close the Gap between Army Chemical Unit Preparedness and Stated National Priorities. Report to the Ranking Minority Member, Subcommittee on National Security and International Relations, Committee on Oversight and Government Reform, House of Representatives.* Washington DC: January 2007.

changes in mission, etc. As a result, doctrine (and the associated requirements, capabilities, and standards of proficiency) consistently lag behind new policies, equipment, and missions. Because doctrine dictates requirements, there is further lag in education and training. As military schools develop curricula based on current doctrine, requirements and programs of record, the education and training are not made available until the doctrine is updated.

Doctrine lag is particularly apparent in the fielding of new equipment, urgent needs equipment, and updated equipment. As required, the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) develops new equipment training, which is deployed with the new equipment. The purpose of the training, however, is to train users on the new system—basic operation, maintenance, etc.—but not on how the equipment fits into the general mission. The training is usually delivered directly to the users but not to the schools or training commands. As a result, until the doctrine and requirements are updated, new equipment training is not incorporated into the schools, the required unit training, or the certification processes (i.e., TTPs or PQS).¹⁸⁵

Advanced NCB threats and hazards: A review of current doctrine, requirements, and standards of proficiency for NCB passive defense reveals that the primary focus is on traditional NCB agents. Despite increasing discussion regarding additional, newer agents and evolutions of existing agents, doctrine continues to focus on agents that were known to have been weaponized during and prior to the Cold War. Information regarding newer agents and novel variations of currently existing agents is classified and is therefore not available for incorporation into unclassified doctrine, requirements, or operational publications. Individuals may not need to be trained about the agents themselves, but rather about what actions to take beyond their usual training if it becomes necessary.

Recommendations:

1. The Services should implement existing processes to integrate new information, doctrine, TTPs, standards of proficiency, education, and training prior to doctrine updates; supplement these processes as required.¹⁸⁶

¹⁸⁵ This issue was initially identified by Navy SMEs. Conversations with Holly Tatum and Gabe Patricio of the JPEO-CBD on 12 June 2007 further highlighted the issue.

¹⁸⁶ Ibid. With respect to new equipment training, the JPEO-CBD noted that they are making efforts to include the Services, schools, and trainers in the new equipment training development process.

2. The Joint Requirements Office (JRO), in conjunction with the Services, the Defense Threat Reduction Agency (DTRA), the intelligence community, and other appropriate organizations, should conduct a risk assessment to determine which Non-Traditional Agents (NTAs) and other classified hazards present a threat that should be addressed in NCB passive defense doctrine. The JRO, in conjunction with the Services, DTRA and other appropriate organizations should then determine, for those agents that should be discussed, what information should be declassified and incorporated into doctrine, TTPs, training, and education versus the requirements for protection of intelligence information and the risks of possible proliferation, in accordance with its responsibilities as laid out in the Implementation Plan for the Management of the Chemical Biological Defense Program.¹⁸⁷

The risk of discussing currently classified NCB threats and hazards, such as NTAs, must be weighed against the disadvantages of not developing unclassified force-wide operational capability to minimize or negate their effects and the resulting vulnerability of U.S. forces. The information that the common Service member needs to know may be general enough that passive defense can be made more effective without classification being required.

Gap: The Navy CBRN defense doctrine and requirements appear to omit certain elements of Joint doctrine and multi-Service tactics, techniques, and procedures.

As noted, the Navy's requirements and basic standards of proficiency are likely to differ from those of the other Services as a function of their differing missions and operating environments. In many cases, these differences are noted as exceptions in the Joint and multi-Service publications. Based on information collected in the course of the study and noted in Chapter 5, some doctrine and basic standards of proficiency required for all Service members may not be incorporated into the current requirements as set forth by the Navy and are not noted as exceptions. As the tables in Chapter 5 indicate, some of these capabilities and standards of proficiency may not be applicable to many or all of the Navy's differing communities—surface, submarine, aviation, construction, expeditionary combatant commands, and others. Others may be required for only a small fraction of the Naval force and may be developed at schools, locations or units that the study team is unaware of.

¹⁸⁷ *Implementation Plan for the Management of the Chemical Biological Defense Program*. Washington DC: April 2003, p. 3

Aldridge memo. Op. cit.

It is important to note that the Navy's passive defense education and training is in alignment with the Service's own requirements.

Recommendation: The Navy should review and update existing Service doctrine, requirements, and training manuals to insure that provided CBRN defense training is aligned with Joint doctrine and multi-Service tactics, techniques, and procedures and to reflect exceptions as necessary.

The Navy is taking action to correct these issues in both the surface and aviation communities, as well as in other areas as necessary. In late-September 2007, the Navy will begin conducting stakeholder discussions on how to bring the Service requirements into alignment with the Joint and multi-Service doctrine.

Observation: Current definitions of Combating Weapons of Mass Destruction (WMD) military mission areas leave room for confusion. This results in unclear responsibilities in NCB doctrine, education, training, and certification.

The National Military Strategy to Combat Weapons of Mass Destruction identifies eight Combating WMD military mission areas. The definitions of these areas are ambiguous and overlapping. For example, the following two definitions apply:

1. Passive defense: Measures to minimize or negate the vulnerability and effects of WMD employed against U.S. and partner/allied Armed Forces, as well as U.S. military interests, installations, and critical infrastructure.
2. WMD consequence management: Actions taken to mitigate the effects of a WMD attack or event and restore essential operations and services at home and abroad.¹⁸⁸

Other sources suggest that the difference between the two is that “passive defense” applies to military forces in combat, and “consequence management” implies installation protection inside and outside the continental United States, response to NCB and Toxic Industrial Chemicals/Toxic Industrial Material (TIC/TIM) attacks, and assistance either to the federal or a foreign government. Even that differentiation, however, is ambiguous in the literature.

Consequently, it is unclear where certain proficiencies would fall—decontamination, hazard characterization, hazard avoidance, downwind mapping, monitoring and surveillance, and others. These basic skills could be either passive

¹⁸⁸ CJCS. 13 February 2006. Op. cit., p. 30.

defense, consequence management, or both. As long as an attempt is made to differentiate between these mission areas and to associate proficiencies with a particular mission area rather than an overarching NCB defense mission, challenges will remain regarding the assignment of doctrine, operations, requirements, education, training, and certification.

Currently, NCB passive defense comprises a set of skills and capabilities that every Service member must develop. These skills and capabilities are designed to mitigate the effects of an NCB attack on U.S. forces by educating and training Service members to protect themselves and each other—for example, how to don a mask, how to recognize contamination signs, how to decontaminate oneself.

Despite these skills and capabilities being designated NCB passive defense, these are fundamental skills essential to all the Combating WMD military mission areas. Those conducting active defense, consequence management, elimination, interdiction, and other missions must be able to demonstrate at least the same skills and capabilities as those who solely have to conduct NCB passive defense. They might require additional skills as well, but the need for the fundamentals still remains.

Retaining multiple mission areas, each with its own required skills and capabilities, can result in overlaps and omissions—overlaps in those skills and capabilities that need to be taught for every military mission, and omissions if passive defense skills are assumed to have been taught elsewhere.

One solution, therefore, is to establish a single NCB mission—for example, continued operations in an NCB hazard environment—with a set of fundamental, required skills and capabilities, as shown in Figure VIII-1.

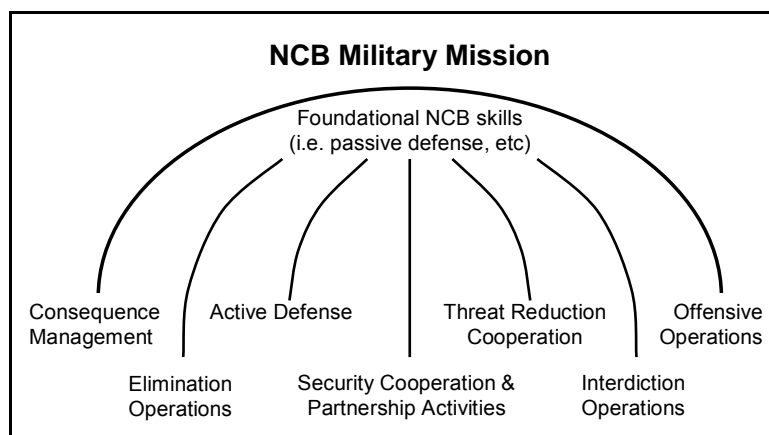


Figure VIII-1. Representation of Proposed NCB Military Mission with Subordinate Military Mission Areas

Many of those skills and capabilities will be those from the passive defense military mission area, but other mission areas may be drawn on as well. This single overall mission is one that every Service member should be capable of conducting; therefore, it is possible to identify certain skills that every Service member must have. Thus, for that single mission, doctrine, requirements, training, education, and certification can be comprehensively identified.

Additional subordinate mission areas might be identified as necessary, and with them, additional doctrine, requirements, skills, and capabilities. For these additional skills, education, and training would have to be developed. For example, consequence management and interdiction, two Combating WMD military subordinate mission areas, require additional skills that are needed only by those Service members who are engaged in the specific, subordinate missions.

Recommendation: The Department of Defense should establish a single NCB mission with defined Combating WMD subordinate mission areas, as necessary and realign education and training accordingly.

C. ALIGNMENT OF SERVICES' EDUCATION AND TRAINING OBJECTIVES WITH JOINT AND SERVICE REQUIREMENTS

Observation: NCB passive defense requirements vary by Service.

The Services agreed to the doctrine and requirements as set forth by the Joint publications and multi-Service manuals, with exceptions – additional requirements that a Service established for itself or requirements that a Service noted as non-applicable. Given the varying missions of the Services and their differing operating environments, it makes sense that some requirements, standards, and capabilities will apply to some Services and not to others.

Recommendations:

1. The Services should investigate opportunities for Joint NCB passive defense EDUCATION by leveraging existing curricula or developing new education courses.

The subjects, material, and knowledge taught in classrooms may be similar for some or all of the Services. The Marine Corps already leverages Army courses taught at the United States Army Chemical School, and Joint Professional Military Education to address NCB topics in development. Other opportunities may exist for developing Joint

medical NCB education and training, as well as Joint education in other NCB passive defense topics.

2. NCB passive defense individual and unit TRAINING should continue to be conducted at the Service level; where applicable, specialized Joint TRAINING for both individuals and units should continue to be conducted and potentially expanded to take advantage of facilities, training centers, subject matter experts, etc.

Because of the varying Service-required NCB passive defense skills and capabilities and Service responsibility for training,¹⁸⁹ training to Service-specified requirements and standards should be conducted at the Service level and should incorporate Joint doctrine and multi-Service TTPs. Joint and multi-Service training opportunities should be utilized as well to allow access to specialized facilities, training centers, subject matter experts, or other features.

3. Advanced Medical NCB passive defense EDUCATION and TRAINING (i.e., field medic training) should be conducted at the Joint level. As applicable, Service-specific medical NCB education and training should be conducted at the Service level.

The amount of Service-specific medical NCB passive defense education and training was unclear to the study team. However, opportunities clearly exist for the incorporation of advanced-level medical NCB passive defense Joint education and training (i.e. Field Management of Chemical and Biological Casualties (FCBC), Medical Management of Chemical and Biological Casualties (MCBC), and Medical Effects of Ionizing Radiation (MEIR)).

Gap: Military NCB medical advanced education and training for patient care providers exists but lacks a Service requirement. In practice, *very few Service healthcare providers are required to attend the advanced-level courses.*

The major gap identified in analysis of the doctrine and requirements, versus the validated courses and their content, is that there are only limited requirements for attendance at the advanced-level professional medical courses (FCBC, MCBC, and MEIR) for healthcare providers in all the Services. Attendees comprise a minimal subset of all healthcare providers in uniform—generally providers in certain operational billets,

¹⁸⁹ *United States Code, Title 10, Subtitle B, Part I, Chapter 803, Sections 2013, 5013, and 8013.* Washington, DC: 2 January 2006. <http://uscode.house.gov/>. (accessed 9 JUN 2007).

in certain healthcare roles, and on certain types of response teams. Where providers are identified to take advanced-level medical professional NCB training, these requirements vary from Service to Service and are not consistent. In other cases, more general doctrinal publications “suggest” attendance at the advanced-level courses, but there are no specified requirements. While Services may vary in their general NCB education and training requirements as a function of their differing missions, it is unclear whether that variation should carry over into the medical community or whether it should be expected that patient care providers across the Services receive approximately the same education and training for the treatment of NCB casualties.

Recommendation: OSD(HA), the Services, and the Service Surgeon Generals should identify the advanced NCB medical knowledge required for patient care providers and determine how that requirement could best be met. In particular, identify whether the advanced NCB medical education and training may be met via the three professional-level courses (FCBC, MCBC, and MEIR) or other courses (if such a requirement exists).

This gap and its resolution have been identified by DMRTI and members of the medical community as a high priority issue.

Requirements and doctrine should be based on the skills and capabilities necessary for accomplishing advanced NCB medical tasks. Once those skills, capabilities, and tasks are identified, requirements and doctrine can be established.

Using the doctrine and requirements, existing courses should be assessed and considered for advanced education and training, possibly with changes as necessary to conform to the established advanced NCB medical requirements. Additional courses should be identified or created as necessary. Further, the Services must commit both personnel and resources to facilitate compliance with the requirement. In simpler terms, once the requirement is identified, course attendees must be identified, allowed to attend, and funded for participation.

The cost of establishing an advanced medical NCB education and training requirement may be minimal. On the other hand, there are significant costs associated with the actual implementation including the cost of attendance and the cost to healthcare institutions which would be required to provide a replacement on-site while the student provider was attending the advanced course. Some training may also be accomplished by train-the-trainer programs, where a single or a minimum number of individuals at a command are designated to attend the training and then provide training back to other patient care providers at their commands.

For the Army, the decision was made on August 6th, 2007, to establish requirements for advanced medical NCB training. The U.S. Army Medical Command promulgated policy establishing required advanced-level medical NCB courses, including MCBC, FCBC, MEIR, the Homeland Security Medical Executive Course, Hospital Management of CBRNE Casualties Course, and the Army North Defense Support of Civil Authorities Course. One or more of these courses may be required for Army medical personnel, depending on their assigned area and billet responsibility.¹⁹⁰ The memo requires that responsible commands take action to meet these requirements by the end of fiscal year 2008.

It is unclear at this stage what additional requirements exist or will be established for the Navy or the Air Force to mirror this action. Given that the courses already exist, the establishment of requirements and the execution of said requirements should only take a minimal amount of time to accomplish if necessitated by the Services.

D. CBRN EDUCATION AND TRAINING SCHOOLS, CLASSES, PRACTICALS, DRILLS, AND EXERCISES

Gap: Currently, only 7 NCB medical education courses, of over 160 with some NCB content, are validated by Defense Medical Readiness Training Institute (DMRTI) to meet Joint and Service educational requirements.

The educational content of the DMRTI Tri-Service CBRNE Medical Training Program, which is promulgated as the basis for NCB training for military medical personnel by the Assistant Secretary of Defense (Health Affairs) (ASD(HA)), adheres well to the doctrine and requirements and sets forth the Standards of Proficiency against which courses must be validated. Although there are over 160 Joint or Service medical courses that include some NCB content, most of these are not validated against the DMRTI Standards of Proficiency. For the courses that have not been validated, it would be incorrect to assume alignment of course content with doctrine and requirements.

The seven courses that are validated in accordance with the DMRTI Standards of Proficiency are the four initial, basic-level Emergency Medical Preparedness and Response Courses (EMPRC) courses (Basic Awareness, Operator/Responders, Clinicians, and Executive/Commander) and FCBC, MCBC, and MEIR courses designed

¹⁹⁰ Headquarters, United States Army Medical Command. Policy on Advanced Chemical, Biological, Radiological, Nuclear, and High Yield Explosives (CBRNE) Medical Training. *Memorandum*. Fort Worth, TX: 6 August 2007.

for the professional-level education of medics and healthcare providers (clinicians). These seven certified courses meet the needs for which they are designed; however, it is difficult to find a flow from doctrine to requirements to educational activities and efforts for the three advanced-level professional courses. The four EMPRC courses meet the requirements that are laid out for basic and awareness-level education of medical personnel; and the three professional courses, MCBC, FCBC, and MEIR, provide useful advanced-level professional medical education in the medical management of chemical, biological, and radiological casualties. The three courses (FCBC, MCBC, and MEIR), conducted at United States Army Medical Research Institute of Chemical Defense (USAMRICD), United States Army Medical Research Institute for Infectious Diseases (USAMRIID), and Armed Forces Radiobiology Research Institute (AFRRI), have had difficulty in recent years obtaining consistent funding from DoD or the Services, largely because the Services have not established which providers must attend and when (discussed below). In contrast, as mentioned earlier in this report, DoD set the policy and requirements for the EMPRC basic-level courses in 2004, and the Services have responded by requiring the basic-level training of all medical department personnel. The Services are reporting compliance with these requirements to DMRTI on a quarterly basis. The Force Health Protection Council (FHPC) is responsible for monitoring Service compliance and ensuring that training requirements are met.

Recommendations:

1. The Force Health Protection Council (FHPC) should ensure Joint and Service medical NCB doctrine and standards for patient care providers are established, standardized and consistent for core knowledge and advanced, professional education and training.¹⁹¹

There must be a reasonable progression from doctrine to requirements to educational activities to include advanced education for NCB Specialists (medical).

2. The FHPC should exercise the existing Joint process for coordination and integration of core and advanced NCB medical education and training to maximize existing Service strengths and identify additional training requirements.

DMRTI has been exploring this concept, but additional emphasis and resources are needed. Several DoD offices have some level of oversight and responsibility for

¹⁹¹ Assistant Secretary of Defense for Health Affairs. Policy on Military Health System Decision-Making Process. Memorandum. Washington, DC: 22 March 2006.

medical NCB education and training. Responsibilities should be clarified at the Service and Joint level. Further, a sustained funding mechanism should be established for all NCB medical knowledge activities.

3. The Tri-Service [Medical] CBRNE Training Committee should review NCB components of additional Joint and Service military medical courses and validate or recommend modifications in accordance with DMRTI-promulgated Standards of Proficiency and metrics.¹⁹²

Observation: There is no technical and operational NCB education and training beyond the existing mid-grade officer and enlisted courses for NCB Specialists. Service members are expected to develop expertise through assignment progression.

The study team noted this observation for both of the NCB Specialist communities—non-medical and medical. As discussed above, in the medical community, the current policy sets up a potential lack of advanced-level medical NCB education. Within the NCB Specialist (non-medical) community, the last time an officer attends a specialized NCB course is as an O-3; the last time an enlisted individual attends a similar course is between E-4 and E-7, depending on the community.

This is not unique to the Chemical/CBRN Specialist/Disaster Preparedness military communities. In fact, in the majority of military occupations, no specialized advanced technical education is afforded post-mid-grade. Further, given that the NCB Specialists (non-medical) have likely been continuously working in their specialized fields for several years, the need for additional technical and operational education is unclear.

Recommendation: The Services should determine the need for advanced technical and operational NCB education and, as required, develop methods for sustainment, update and improvement of technical expertise for NCB Specialists, both non-medical and medical, as necessary.

For NCB Specialists (non-medical), methods for updating and improving technical and operational expertise may already be in place; however, the study team was not able to verify this. For these individuals, it is important to ensure that sustainment training is accomplished both at the junior and post-mid-grade levels. NCB Specialists must have a way of ensuring that they are familiar with the most current passive defense

¹⁹² DMRTI. *Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives (CBRNE) Training – Standards of Proficiency and Metrics*. San Antonio, TX: 1 October 2003.

doctrine, TTPs, equipment, etc. Sustainment of technical expertise may require additional courses, advanced courses, and/or refresher courses.

Observation: No formal education exists to facilitate the integration of NCB operations and passive defense into overarching unit concepts of operation within or across Services.

At the mid-grade level and beyond, officers attend formal education programs designed to facilitate the overall integration of operations—or example, within a division, infantry units working with armor, artillery, signals, engineers, etc; or the interdependence of combat systems, communications networks, and engineering functions on a ship. Currently, however, it is unclear how the integration of the NCB passive defense military mission area is taught. While the purpose of passive defense is to ensure that all pieces work together to mitigate the effects of exposure to NCB hazards—with an ultimate aim of continued operations—the integration of the passive defense skills, capabilities, and standards is not formally taught the way that the integration of other components is taught.

Recommendation:

1. The Services, Joint Staff, and Joint Forces Command should assess the integration of NCB operations and passive defense into existing Service and Joint EXERCISES that challenge NCB passive defense capabilities within and across the Services.

Exercises, even in a Joint context, challenge each Service differently. At the unit level, a Joint exercise may resemble a Service exercise as Service members each respond in accordance with their own Service's doctrine and training. Such exercises, conducted at both the Service and Joint levels, require Service leadership to account for the impacts of NCB on segments of the force and consider the implications of NCB passive defense on continued operations. A Joint exercise, however, has the added advantage of requiring staff at the Joint Headquarters level to understand Service NCB capabilities and skills, as well as the differing impacts of an NCB event on the different Services.

These exercises are conducted at the Service and Joint level currently. In assessing the level of integration of NCB passive defense and operations into the exercises, a determination and recommendation can be made as to whether additional formal education is necessary.

2. The Services, in conjunction with the senior Joint and Service military senior staff colleges and schools and the Defense Threat Reduction Agency (DTRA), should assess the need for and develop, as necessary, formal education to facilitate the integration of NCB passive defense into overarching unit operations.

Efforts are currently underway at the National Defense University to assess and develop NCB passive defense Joint Professional Military Education (JPME). Additionally, some of the staff and war colleges do have courses which incorporate passive defense, as does DTRA at the Defense Nuclear Weapons School. Similar education and training may also be incorporated into mid-grade and senior Service schools. Nevertheless, the study team was unable to determine the extent to which these courses address NCB passive defense integration or what percentage of the officer corps takes advantage of these offerings.

Observation: For a limited number of individuals who fill specialized NCB roles (developing equipment and program requirements, writing doctrine, directing research, and performing acquisition roles, among others), additional formal NCB education and training should be required.

As noted earlier, much of what individuals need to know regarding NCB passive defense relates to individual skills—wearing a mask, donning a suit, identifying hazard signs, performing decontamination, etc. There are a limited number of individuals, however, who need not only those skills, but also an understanding of the underlying principles and science of passive defense, the associated technologies, and the current status of research. Personnel who assume specialized roles within the NCB community include, among others, material requirements authors, doctrine writers, research directors, test and evaluation, and acquisitions professionals.

For example, an individual writing material requirements for a new piece of equipment should understand the physical and chemical properties of the agents involved, the capabilities of the technologies being considered, potential employment concepts and concepts of operation, and be able to understand and assess the benefits and costs. Without this knowledge, it may be impossible to write material requirements that will result in an operationally functional and useful system.

Requirements for specific advanced degrees are in place for some military occupations and billets. On a limited basis, advanced degree assignments are available for

NCB Specialists (non-medical) but the study team could not determine how many positions exist or where they support specialized NCB defense roles.¹⁹³

Recommendation: The Services, in conjunction with the Joint Requirements Office (JRO), Joint Program Executive Office (JPEO), Joint Science and Technology Office (JSTO), and Test and Evaluation Management Agency (TEMA), should review the Service and other agency requirements for Service positions requiring advanced civilian education.

E. PERFORMANCE ASSESSMENT AND CERTIFICATION IN NCB ENVIRONMENTS UNDER REALISTIC CONDITIONS

Gap: While certification processes exist, concerns remain regarding whether unit and collective assessments of training and exercises are conducted under realistic conditions.

Even though the Services use several methods to assess and certify successful demonstration of NCB passive defense standards of proficiency by individual personnel, teams, and units, the issue of realism for unit-based training has been a recurring criticism of the program and, in the course of this effort, we could not identify any changes in this issue. Studies have indicated that the conditions are not realistic, either as a result of time, environment, simulation, operations, etc. For example, one Service told the Government Accountability Office (GAO) that NCB exercises were not conducted because “operating in protective equipment is difficult and time-consuming and this (1) decreases the number of combat essential tasks that can be performed during an exercise and (2) limits offensive combat operations.”¹⁹⁴ A second study noted that training conducted for soldiers and Marines at national training centers prior to deployment included limited or no training for Service members in full personal protective equipment.¹⁹⁵ Other problems included intentional improper use of protective gear during exercises to minimize the

¹⁹³ In over 20 years of scientific and analytical experience with the DoD NCB defense community, study team members have observed the limitations of advanced civilian education among uniformed and civilian NCB specialists.

¹⁹⁴ Government Accountability Office. Report Number GAO-01-27, *CHEMICAL AND BIOLOGICAL DEFENSE: Units Better Equipped, but Training and Readiness Reporting Problems Remain. Report to the Chairman, Committee on Armed Services, House of Representatives*, Washington DC, November 2000.

¹⁹⁵ Government Accountability Office. Report Number GAO-05-8, *CHEMICAL AND BIOLOGICAL DEFENSE: Army and Marine Corps need to Establish Minimum Training Task and Improved Reporting for Combat Training Centers. Report to the Chairman, Subcommittee on National Security, Emerging Threats and International Relations, Committee on Government Reform, House of Representatives*, Washington DC, January 2005.

limitations imposed by equipment; restricted training with simulants due to low levels of unit preparations; and lack of a requirement for demonstrated NCB passive defense skills at the training centers. The study team cites this gap based on documentation in government and military reports, but we were unable to assess it in detail.

Recommendation: The Services should place increased emphasis on realistic NCB unit training and exercise certification and assessment.

Realistic training and exercises utilize feasible scenarios which allow for the realistic demonstration of NCB passive defense skills including but not limited to the use of protective, detection, monitoring, and decontamination equipment; application of concepts of operations and plans; and medical diagnosis, triage, treatment and other procedures.

Gap: Integration, standards, certification, and governance of NCB medical education efforts in DOD and the Services are fragmented and piecemeal in nature.

Although there are many medical and non-medical courses with NCB content available, they are not standardized, most are not approved as meeting DMRTI standards, and there is no career life-cycle approach to NCB medical education for certain medical care providers and specialties. With a few exceptions, the governance and management of such education efforts is poorly integrated, and the certification and tracking of military healthcare providers in the Services for ability to diagnose and treat NCB casualties is almost entirely lacking above a basic level of training and education. In spite of a 2001 GAO report criticizing the DoD NCB medical education efforts, only the requirements for the most basic level of medical education in NCB casualty management have been addressed by DoD or the military Services.

Recommendation: The Services should establish certification and tracking of military healthcare providers for advanced NCB medical training and education.

F. ADDITIONAL OBSERVATIONS

Six additional observations are discussed below.

Observation: Responsibility for policy-level NCB passive defense oversight is unclear.

Although this study intentionally did not focus on policy-level NCB organizations, it became clear, just in the use of reference materials, that the existing language and directives create confusion regarding policy-level responsibility for NCB training.

Within and across legislative language and DoD documents, the responsibility for oversight and training is delineated to both the Under Secretary of Defense (USD) (Personnel & Readiness (P&R)) and the Under Secretary of Defense (Acquisition, Technology, and Logistics (AT&L)) and delegated to the Assistants to the Secretary of Defense (ATSD) (Health Affairs) and (Nuclear, Chemical, and Biological Defense Programs) respectively. Per Title X, Section 136 of the U.S. Code, USD(P&R) has authority, direction and control in areas related to training, among others.¹⁹⁶ Title X, Section 1522 assigns a single office within the Secretary of Defense responsibility for the “overall coordination and integration of the chemical and biological warfare defense program and the chemical and biological medical defense program,”¹⁹⁷ including a review for Congress of several chemical and biological areas of interest, including training.

Rather than clarifying responsibilities, DoD directives and implementation plans only serve to further confuse the issue. For example, in *DoD Directive (DoDD) 2060.02, Department of Defense (DoD) Combating Weapons of Mass Destruction Policy*, USD(P&R) is responsible for ensuring “implementation of DoD combating WMD Force Health Protection (FHP) policy, training, and readiness and establish[ing] procedures and standards governing DoD FHP programs. In support of the Under Secretary’s role, the Assistant Secretary of Defense for Health Affairs is the single point of contact for the Office of the USD(P&R) for combating WMD.”¹⁹⁸ Although *DoDD 5134.8, Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs (ATSD(NCB))*, requires the ATSD(NCB) to “coordinate and exchange information with other DoD organizations having collateral or related functions,”¹⁹⁹ the study team was not able to locate any documentation that suggests this relationship has been formalized into DoD doctrine. For example, the *Strategic Plan for Transforming DoD Training* does not assign USD(AT&L) or any of its subordinate offices responsibilities for coordination or collaboration in training, whereas the *Implementation Plan for the Management of the*

¹⁹⁶ *United States Code, Title 50, Chapter 10, Section 136 (Sec. 136)*. Washington, DC: 2 January 2006. <http://uscode.house.gov/> (accessed 9 June 2007).

¹⁹⁷ *United States Code, Title 50, Chapter 10, Section 1522 (Sec. 1522)*. Washington, DC: 2 January 2006. <http://uscode.house.gov/> (accessed 10 June 2007).

¹⁹⁸ Department of Defense. *DoD Directive 2060.02, Department of Defense (DoD) Combating Weapons of Mass Destruction Policy*. 19 April 2007, p. 4.

¹⁹⁹ Department of Defense. *DoDD 5134.8, Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs (ATSD(NCB))*. 8 June 1994, p. 5.

Chemical and Biological Defense Program (CBDP) establishes that the ATSD(NCB) serves as the single office within the Office of the Secretary of Defense responsible for “overall coordination and integration of the DoD CBDP medical and non-medical program.”²⁰⁰ The ATSD(NCB) and his subordinate offices hold that this implies responsibility for the coordination and integration of NCB education and training.

Recommendation: USD(P&R) and USD(AT&L), in conjunction with ATSD(HA) and ATSD(NCB), should continue current collaboration efforts and publish guidance to eliminate existing confusion introduced through documentation.

These offices are already making efforts to collaborate in regards to both medical and non-medical training. Such efforts should continue. Any future confusion may be avoided through the clarification of existing directives and DoD language to formalize the process that these organizations have begun on their own.

Observation: Responsibility for NCB passive defense doctrine, education, training, and certification for CBRNE response organizations is unclear.

Despite this study’s focus on NCB passive defense education and training, the CBRNE response organizations (i.e., the Weapons of Mass Destruction Civil Support Teams (WMD-CSTs), the National Guard’s CBRNE Enhanced Response Force Packages (CERFPs), the Marine Corps’ Chemical/Biological Incident Response Force (CBIRF), and the Army’s 20th Support Command) were considered outside the scope of the study because their primary Combating WMD mission is Consequence Management. However, discussions during the course of this research uncovered a number of questions surrounding the doctrine, education, training, and certification these groups receive. Foremost among them is the question of who is responsible for the development of the doctrine. With CBIRF the answer lies with the Marine Corps. Based on our conversations with some of the parties involved, the answer appears less clear for the WMD-CSTs and CERFPs, even to those actually involved in the process. For example, directives indicate that the National Guard Bureau and the U.S. Army Chemical School are the proponent organizations for the WMD-CSTs, however, other organizations may have significant

²⁰⁰ Director, Readiness and Training Policy and Programs, Office of the Under Secretary of Defense for Personnel and Readiness. *Department of Defense Training Transformation Implementation Plan*. Washington, DC: 10 June 2003.

Under Secretary of Defense for Defense Acquisition, Technology, and Logistics. *Implementation Plan for the Management of the Chemical Biological Defense Program*. Washington, DC: 22 April 2003, p. 2.

doctrine and training roles for these organizations, including the Army Medical Department Center and School, and others. This question and others regarding the education, training, and certification processes have already been the subject of DoD and other government agency analysis. An in-depth look at these organizations and how they are prepared for their potential roles would facilitate an understanding of how they fit into the overall Combating WMD military mission areas and the military as well.

Recommendation: The Services, in coordination with the National Guard Bureau, the Office of the Secretary of Defense, and other appropriate organizations, should clarify the roles and responsibilities for CBRNE response organizations' NCB doctrine, education, training, and certification.

Observation: Current terminology includes too many phrases to identify a single concept—NCB; Nuclear, Biological, and Chemical (NBC); Chemical, Biological, and Radiological (CBR); Chemical, Biological, Radiological, and Nuclear (CBRN); Chemical, Biological, Radiological, Nuclear and (High-Yield) Explosives (CBRNE); WMD, Counter-CBRN (C-CBRN), CBRN Defense (CBRND) and others—without clear differentiation regarding the differences, if any, between the phrases.

Having multiple phrases that all indicate a single concept—hazards posed by nuclear, chemical, biological, radiological, and high yield explosive threats—leads to confusion. The differences, if any, between these phrases are unclear and ambiguous. The study team was unable to differentiate between Combating WMD, Counter-CBRN and CBRN Defense, as all are used nearly interchangeably. As a result, conversations, and the resulting doctrine, requirements, education and training become unclear. For example, does an NBC course include radiological topics as well? Or, is WMD comprised of CBR, CBRN, or CBRNE?

Recommendation: The Department of Defense should agree on a single term or should provide for clear and concise differentiation between the varying terminologies.

Observation: While NCB passive defense doctrine, education, training, and certification are primarily responsibilities of the Services and Joint Staff, a number of other organizations want or expect to assume responsibilities in this arena.

U.S. Code, Title X, makes NCB passive defense—doctrine development, education, training, and certification—the responsibility of each individual Service. Even so, other offices, agencies, organizations, and working groups would like to participate in developing, guiding, or providing doctrine, education, and training. A number of these

are identified in Annex B. Some have an official role by virtue of their mission and/or DoD directives. Others do not.

In either case, without the knowledge, coordination, and cooperation of the Services (and the JRO), these organizations cannot successfully contribute to the NCB passive defense arena. These groups may be beneficial, but the study team had the opportunity to interact with only a small sample of them in the course of this research and did not make an assessment of their utility. During our research, however, not a single Service SME noted the value of any of the multiple NCB education and training groups. This may indicate that the organizations are not reaching the Services or they are not providing functions that the Services consider necessary or beneficial.

Recommendation: The JRO, in accordance with its responsibilities as laid out in the *Implementation Plan for the Management of the Chemical Biological Defense Program*,²⁰¹ and DTRA, as the designated executive agent for nuclear weapons training, should support and facilitate the efforts of the various working groups, stakeholders groups, and organizations addressing NCB defense training, education and doctrine by identifying the aims, goals, and intended roles, responsibilities, and authorities of these various organizations.

There may be utility in a small number of organizations that are able to provide locations for discussion, coordination, and consolidation of NCB information and specific topics. One such organization is the Combating WMD Education and Training Integration Council (ETIC), which hosts an annual conference for Services, Combatant Commands, and other organizations to discuss NCB doctrine, education, and training issues. The organization's objective states that it will "facilitate and enhance communication within DoD organizations to address appropriate education and training for Combating WMD."²⁰² Other organizations could likewise support this function.²⁰³ The ETIC has already made efforts to reach out to the Services, OSD offices, and

²⁰¹ Department of Defense. *Implementation Plan for the Management of the Chemical Biological Defense Program*. Op. cit., p. 4.

²⁰² Department of Defense, *Chemical and Biological Defense Program. Charter for the Department of Defense Combating Weapons of Mass Destruction Education and Training Integration Council (DRAFT)*. Washington, DC: 23 April 2007.

²⁰³ Through the course of the study, the study team learned of other groups, as well, listed in Appendix B. However, the study team had only limited interaction with these organizations and can therefore not make an assessment of any particular organization's utility to serve as an NCB discussion, coordination, and collaboration facilitator.

schools, as well as to develop a repository of NCB education and training courses and information.

If such an organization is established, however, it must be done in coordination with the JRO and with the cooperation of the Services. The correct representatives must be available and even encouraged, as necessary, to participate in discussions and efforts, if such a group is to succeed in providing any type of useful opportunity for coordinating efforts, exchanging ideas, and discussing current events.

Observation: NCB passive defense is not always a priority.

There may be a threat of NCB hazards being employed against U.S. forces. It was largely believed during the Cold War that such a threat existed. Similarly during Desert Storm and Desert Shield, NCB passive defense education and training was ramped up in preparation for a suspected threat. More recently, on entry into both Afghanistan and Iraq, passive defense efforts were increased.

That threat, as compared with the conventional threats and hazards faced by U.S. forces on a daily basis in Iraq and Afghanistan, is now considered insignificant. Beyond the incidental and accidental exposures of U.S. forces to chemical agents and the recent failed attempts of insurgents to unsuccessfully deploy toxic industrial chemicals as weapons, the expected NCB threat has not been realized. As a result, preparation for NCB passive defense has ceased to be a priority. When forced to choose where and how to expend training, time, and resources, commanders will likely choose training, equipment, and time to protect against current threats, such as insurgents, improvised explosive devices, and snipers.

That is not to say that commanders should not or do not meet the established requirements. Conversations with SMEs indicate that the Services are conducting training and education as required to develop the basic standards of proficiency.

In reality, the only thing that will increase the urgency of NCB passive defense is an attack—a successful employment of NCB hazards against U.S. forces that results in fatalities—or clear indication that a possible threat exists. But in a theater where NCB suddenly becomes a priority, there may not be time to train forces and prepare Service members to take action to mitigate the effects of NCB hazards. After an attack, resources will become available to ensure that forces are properly prepared to conduct NCB passive defense, but preparatory training must continue as well in order to be able to mitigate that suddenly arising threat.

Recommendation: The Services, in conjunction with the JRO, JPEO, JSTO, and DTRA, should make efforts to leverage existing operations and activities to develop NCB passive defense training and education for incorporation into everyday operations.

The only way to ensure that NCB passive defense education and training receive command focus and that Service members continue to train and develop these NCB passive defense skills is to make that focus and training easy to implement. NCB training and drills should be folded into everyday activities rather than exist as completely separate plans, exercises, and drills. This may require some consideration for operational planning and material solutions as well.

Passive defense is something that Service members practice every day as they carry out routine tasks, even if the tasks are not specifically NCB passive defense. They plan routes and analyze risks and intelligence regarding attacks. They assess warning signs. They mark and secure areas that require it. They practice, every day, donning and doffing protective equipment—helmets and body armor—and carrying out their operational missions in full gear, with an eye towards mitigating an attack, but with full knowledge of how to respond and recover if an attack occurs. Although these routine tasks are not adequate to ensure that Service members know how to perform certain NCB passive defense skills and capabilities, they could be leveraged to provide the basis for additional NCB passive defense education and training, noting both the similarities and the differences that separate NCB passive defense from the protective actions that Service members take every day. Commanders then have the potential benefit of duality—reinforcement of everyday lessons while incorporating NCB passive defense lessons simultaneously. Through this and other methods, NCB passive defense could become routine, and then, even despite not being a priority, the skills and capabilities are renewed and redeveloped and therefore more likely to be effected correctly when needed.

Appendix A

LEGISLATIVE LANGUAGE PERTAINING TO NCB EDUCATION & TRAINING

LEGISLATIVE LANGUAGE PERTAINING TO NCB EDUCATION & TRAINING

In addition to the text of House Report 109-452, there are several important pieces of legislative language that dictate roles and responsibilities within the sector of NCB education and training. Title X, Subtitle B, Part I, of the U.S. Code designates the Service Secretaries responsible for the education and training of Service members (as shown in Exhibits A-1 through A-3). Additionally, Title X designates an Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (Exhibit A-4) with responsibilities for advising on NCB defense, and an Under Secretary of Defense for Personnel and Readiness (Exhibit A-5) with additional training responsibilities.

§ 3013. Secretary of the Army

- (a)
 - (i) There is a Secretary of the Army, appointed from civilian life by the President, by and with the advice and consent of the Senate. The Secretary is the head of the Department of the Army.
 - (ii) A person may not be appointed as Secretary of the Army within five years after relief from active duty as a commissioned officer of a regular component of an armed force.
- (b) Subject to the authority, direction, and control of the Secretary of Defense and subject to the provisions of chapter 6 of this title, the Secretary of the Army is responsible for, and has the authority necessary to conduct, all affairs of the Department of the Army, including the following functions:
 - (i) Recruiting.
 - (ii) Organizing.
 - (iii) Supplying.
 - (iv) Equipping (including research and development).
 - (v) Training.
 - (vi) Servicing.
 - (vii) Mobilizing.
 - (viii) Demobilizing.
 - (ix) Administering (including the morale and welfare of personnel).
 - (x) Maintaining.
 - (xi) The construction, outfitting, and repair of military equipment.
 - (xii) The construction, maintenance, and repair of buildings, structures, and utilities and the acquisition of real property and interests in real property necessary to carry out the responsibilities specified in this section.

- (c) Subject to the authority, direction, and control of the Secretary of Defense, the Secretary of the Army is also responsible to the Secretary of Defense for—
 - (i) the functioning and efficiency of the Department of the Army;
 - (ii) the formulation of policies and programs by the Department of the Army that are fully consistent with national security objectives and policies established by the President or the Secretary of Defense;
 - (iii) the effective and timely implementation of policy, program, and budget decisions and instructions of the President or the Secretary of Defense relating to the functions of the Department of the Army;
 - (iv) carrying out the functions of the Department of the Army so as to fulfill the current and future operational requirements of the unified and specified combatant commands;
 - (v) effective cooperation and coordination between the Department of the Army and the other military departments and agencies of the Department of Defense to provide for more effective, efficient, and economical administration and to eliminate duplication;
 - (vi) the presentation and justification of the positions of the Department of the Army on the plans, programs, and policies of the Department of Defense; and
 - (vii) the effective supervision and control of the intelligence activities of the Department of the Army.
- (d) The Secretary of the Army is also responsible for such other activities as may be prescribed by law or by the President or Secretary of Defense.
- (e) After first informing the Secretary of Defense, the Secretary of the Army may make such recommendations to Congress relating to the Department of Defense as he considers appropriate.
- (f) The Secretary of the Army may assign such of his functions, powers, and duties as he considers appropriate to the Under Secretary of the Army and to the Assistant Secretaries of the Army. Officers of the Army shall, as directed by the Secretary, report on any matter to the Secretary, the Under Secretary, or any Assistant Secretary.
- (g) The Secretary of the Army may—
 - (i) assign, detail, and prescribe the duties of members of the Army and civilian personnel of the Department of the Army;
 - (ii) change the title of any officer or activity of the Department of the Army not prescribed by law; and
 - (iii) prescribe regulations to carry out his functions, powers, and duties under this title.

Source: <http://uscode.house.gov/>. (accessed 9 June 2007).

Exhibit A-1. Title 10, Subtitle B, Part I, Chapter 303, Section 3013, Secretary of the Army

§ 5013. Secretary of the Navy

- (a)
 - (i) There is a Secretary of the Navy, appointed from civilian life by the President, by and with the advice and consent of the Senate. The Secretary is the head of the Department of the Navy.
 - (ii) A person may not be appointed as Secretary of the Navy within five years after relief from active duty as a commissioned officer of a regular component of an armed force.
- (b) Subject to the authority, direction, and control of the Secretary of Defense and subject to the provisions of chapter 6 of this title, the Secretary of the Navy is responsible for, and has the authority necessary to conduct, all affairs of the Department of the Navy, including the following functions:
 - (i) Recruiting.
 - (ii) Organizing.
 - (iii) Supplying.
 - (iv) Equipping (including research and development).
 - (v) Training.
 - (vi) Servicing.
 - (vii) Mobilizing.
 - (viii) Demobilizing.
 - (ix) Administering (including the morale and welfare of personnel).
 - (x) Maintaining.
 - (xi) The construction, outfitting, and repair of military equipment.
 - (xii) The construction, maintenance, and repair of buildings, structures, and utilities and the acquisition of real property and interests in real property necessary to carry out the responsibilities specified in this section.
- (c) Subject to the authority, direction, and control of the Secretary of Defense, the Secretary of the Navy is also responsible to the Secretary of Defense for—
 - (i) the functioning and efficiency of the Department of the Navy;
 - (ii) the formulation of policies and programs by the Department of the Navy that are fully consistent with national security objectives and policies established by the President or the Secretary of Defense;
 - (iii) the effective and timely implementation of policy, program, and budget decisions and instructions of the President or the Secretary of Defense relating to the functions of the Department of the Navy;
 - (iv) carrying out the functions of the Department of the Navy so as to fulfill the current and future operational requirements of the unified and specified combatant commands;
 - (v) effective cooperation and coordination between the Department of the Navy and the other military departments and agencies of the Department of Defense to provide for more effective, efficient, and economical administration and to eliminate duplication;
 - (vi) the presentation and justification of the positions of the Department of the Navy on the plans, programs, and policies of the Department of Defense; and

- (vii) the effective supervision and control of the intelligence activities of the Department of the Navy.
- (d) The Secretary of the Navy is also responsible for such other activities as may be prescribed by law or by the President or Secretary of Defense.
- (e) After first informing the Secretary of Defense, the Secretary of the Navy may make such recommendations to Congress relating to the Department of Defense as he considers appropriate.
- (f) The Secretary of the Navy may assign such of his functions, powers, and duties as he considers appropriate to the Under Secretary of the Navy and to the Assistant Secretaries of the Navy. Officers of the Navy and the Marine Corps shall, as directed by the Secretary, report on any matter to the Secretary, the Under Secretary, or any Assistant Secretary.
- (g) The Secretary of the Navy may—
 - (i) assign, detail, and prescribe the duties of members of the Navy and Marine Corps and civilian personnel of the Department of the Navy;
 - (ii) change the title of any officer or activity of the Department of the Navy not prescribed by law; and
 - (iii) prescribe regulations to carry out his functions, powers, and duties under this title.

Source: <http://uscode.house.gov/>. (accessed 9 June 2007).

Exhibit A-2. Title 10, Subtitle B, Part I, Chapter 503, Section 5013, Secretary of the Navy

§ 8013. Secretary of the Air Force

- (a)
 - (i) There is a Secretary of the Air Force, appointed from civilian life by the President, by and with the advice and consent of the Senate. The Secretary is the head of the Department of the Air Force.
 - (ii) A person may not be appointed as Secretary of the Air Force within five years after relief from active duty as a commissioned officer of a regular component of an armed force.
- (b) Subject to the authority, direction, and control of the Secretary of Defense and subject to the provisions of chapter 6 of this title, the Secretary of the Air Force is responsible for, and has the authority necessary to conduct, all affairs of the Department of the Air Force, including the following functions:
 - (i) Recruiting.
 - (ii) Organizing.
 - (iii) Supplying.
 - (iv) Equipping (including research and development).
 - (v) Training.
 - (vi) Servicing.
 - (vii) Mobilizing.
 - (viii) Demobilizing.
 - (ix) Administering (including the morale and welfare of personnel).
 - (x) Maintaining.
 - (xi) The construction, outfitting, and repair of military equipment.
 - (xii) The construction, maintenance, and repair of buildings, structures, and utilities and the acquisition of real property and interests in real property necessary to carry out the responsibilities specified in this section.
- (c) Subject to the authority, direction, and control of the Secretary of Defense, the Secretary of the Air Force is also responsible to the Secretary of Defense for—
 - (i) the functioning and efficiency of the Department of the Air Force;
 - (ii) the formulation of policies and programs by the Department of the Air Force that are fully consistent with national security objectives and policies established by the President or the Secretary of Defense;
 - (iii) the effective and timely implementation of policy, program, and budget decisions and instructions of the President or the Secretary of Defense relating to the functions of the Department of the Air Force;
 - (iv) carrying out the functions of the Department of the Air Force so as to fulfill the current and future operational requirements of the unified and specified combatant commands;
 - (v) effective cooperation and coordination between the Department of the Air Force and the other military departments and agencies of the Department of Defense to provide for more effective, efficient, and economical administration and to eliminate duplication;
 - (vi) the presentation and justification of the positions of the Department of the Air Force on the plans, programs, and policies of the Department of Defense; and

- (vii) the effective supervision and control of the intelligence activities of the Department of the Air Force.
- (d) The Secretary of the Air Force is also responsible for such other activities as may be prescribed by law or by the President or Secretary of Defense.
- (e) After first informing the Secretary of Defense, the Secretary of the Air Force may make such recommendations to Congress relating to the Department of Defense as he considers appropriate.
- (f) The Secretary of the Air Force may assign such of his functions, powers, and duties as he considers appropriate to the Under Secretary of the Air Force and to the Assistant Secretaries of the Air Force. Officers of the Air Force shall, as directed by the Secretary, report on any matter to the Secretary, the Under Secretary, or any Assistant Secretary.
- (g) The Secretary of the Air Force may—
 - (i) assign, detail, and prescribe the duties of members of the Air Force and civilian personnel of the Department of the Air Force;
 - (ii) change the title of any officer or activity of the Department of the Air Force not prescribed by law; and
 - (iii) prescribe regulations to carry out his functions, powers, and duties under this title.

Source: <http://uscode.house.gov/>. (accessed 9 June 2007)

**Exhibit A-3. Title 10, Subtitle B, Part I, Chapter 803, Section 8013,
Secretary of the Air Force**

§ 142. Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs

- (a) There is an Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs, appointed by the President, by and with the advice and consent of the Senate.
- (b) The Assistant to the Secretary shall—
 - (i) advise the Secretary of Defense on nuclear energy, nuclear weapons, and chemical and biological defense;
 - (ii) serve as the Staff Director of the Nuclear Weapons Council established by section 179 of this title; and
 - (iii) perform such additional duties as the Secretary may prescribe.

Source: uscode.house.gov/. (accessed 9 June 2007)

Exhibit A-4. Title 10, Subtitle A, Part I, Chapter 4, Section 142, Designative the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs

§ 136. Under Secretary of Defense for Personnel and Readiness

- (a) There is an Under Secretary of Defense for Personnel and Readiness, appointed from civilian life by the President, by and with the advice and consent of the Senate.
- (b) Subject to the authority, direction, and control of the Secretary of Defense, the Under Secretary of Defense for Personnel and Readiness shall perform such duties and exercise such powers as the Secretary of Defense may prescribe in the areas of military readiness, total force management, military and civilian personnel requirements, military and civilian personnel training, military and civilian family matters, exchange, commissary, and nonappropriated fund activities, personnel requirements for weapons support, National Guard and reserve components, and health affairs.
- (c) The Under Secretary of Defense for Personnel and Readiness takes precedence in the Department of Defense after the Under Secretary of Defense (Comptroller).
- (d) The Under Secretary of Defense for Personnel and Readiness is responsible, subject to the authority, direction, and control of the Secretary of Defense, for the monitoring of the operations tempo and personnel tempo of the armed forces. The Under Secretary shall establish, to the extent practicable, uniform standards within the Department of Defense for terminology and policies relating to deployment of units and personnel away from their assigned duty stations (including the length of time units or personnel may be away for such a deployment) and shall establish uniform reporting systems for tracking deployments.

Source: uscode.house.gov/. (accessed 10 June 2007).

Exhibit A-5. Title 10, Subtitle A, Part I, Chapter 4, Section 136, Under Secretary of Defense for Personnel and Readiness

§ 1522. Conduct of chemical and biological defense program

(a) General

The Secretary of Defense shall carry out the chemical and biological defense program of the United States in accordance with the provisions of this section.

(b) Management and oversight

In carrying out his responsibilities under this section, the Secretary of Defense shall do the following:

- (i) Assign responsibility for overall coordination and integration of the chemical and biological warfare defense program and the chemical and biological medical defense program to a single office within the Office of the Secretary of Defense.
- (ii) Take those actions necessary to ensure close and continuous coordination between
 - (1) the chemical and biological warfare defense program, and
 - (2) the chemical and biological medical defense program.
- (iii) Exercise oversight over the chemical and biological defense program through the Defense Acquisition Board process.

(c) Coordination of program

- (i) The Secretary of Defense shall designate the Army as executive agent for the Department of Defense to coordinate and integrate research, development, test, and evaluation, and acquisition, requirements of the military departments for chemical and biological warfare defense programs of the Department of Defense.
- (ii) The Director of the Defense Advanced Research Projects Agency may conduct a program of basic and applied research and advanced technology development on chemical and biological warfare defense technologies and systems. In conducting such program, the Director shall seek to avoid unnecessary duplication of the activities under the program with chemical and biological warfare defense activities of the military departments and defense agencies and shall coordinate the activities under the program with those of the military departments and defense agencies.

(d) Funding

- (i) The budget for the Department of Defense for each fiscal year after fiscal year 1994 shall reflect a coordinated and integrated chemical and biological defense program for the Department of Defense.
- (ii) Funding requests for the program (other than for activities under the program conducted by the Defense Advanced Research Projects Agency under subsection (c)(2) of this section) shall be set forth in the budget of the Department of Defense for each fiscal year as a separate account, with a single program element for each of the categories of research, development, test, and evaluation, acquisition, and military construction. Amounts for military construction projects may be set forth in the annual military construction budget. Funds for military construction for the program in the military construction budget shall be set forth separately from other funds for military construction projects. Funding requests for the program may not be included in the budget accounts of the military departments.
- (iii) The program conducted by the Defense Advanced Research Projects Agency under subsection (c)(2) of this section shall be set forth as a separate program element in the budget of that agency.

- (iv) All funding requirements for the chemical and biological defense program shall be reviewed by the Secretary of the Army as executive agent pursuant to subsection (c) of this section.

(e) **Management review and report**

- (i) The Secretary of Defense shall conduct a review of the management structure of the Department of Defense chemical and biological warfare defense program, including—
 - (1) research, development, test, and evaluation;
 - (2) procurement;
 - (3) doctrine development;
 - (4) policy;
 - (5) training;
 - (6) development of requirements;
 - (7) readiness; and
 - (8) risk assessment.
- (ii) Not later than May 1, 1994, the Secretary shall submit to Congress a report that describes the details of measures being taken to improve joint coordination and oversight of the program and ensure a coherent and effective approach to its management.

Source: <http://uscode.house.gov/>. (accessed 10 June 2007).

Exhibit A-6. Title 50, Chapter 32, Section 1522, Conduct of Chemical and Biological Defense Program

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Appendix B

INTERESTED PARTIES – DOCTRINE, EDUCATION AND TRAINING

INTERESTED PARTIES – DOCTRINE, EDUCATION AND TRAINING

The following is a brief listing of some of the organizations with an interest in or currently participating in NCB passive defense doctrine, education, training, and certification activities. The list is not all-inclusive; however, it does indicate how many different organizations play a role currently in the NCB passive defense realm.

OFFICE OF THE SECRETARY OF DEFENSE

- Office of the Special Assistant to the Secretary of Defense for Chemical and Biological Defense & Chemical Demilitarization Programs, (SA(CBD&CDP))
 - DoD CBRN Defense Education and Training Integration Directorate
- Office of the Under Secretary of Defense (Policy, Combating WMD)
- Office of the Under Secretary of Defense (Policy)
 - Office of the Assistant Secretary of Defense (Homeland Defense)
- Office of the Under Secretary of Defense (Personnel and Readiness)
 - Directorate of Readiness & Training
 - Modeling and Simulation Coordination Office
 - Joint Assessment and Enabling Capability (JAEC)
- Office of the Assistant Secretary of Defense (Health Affairs)
 - Chemical, Biological, Radiological, & Nuclear Medical Defense
 - Office of Force Health Protection & Readiness
- Joint Program Executive Office (JPEO) Chemical and Biological Defense
 - Joint Program Manager – Guardian
 - Joint Program Manager – Bio Detection
 - Joint Program Manager – NBC Contamination Avoidance
 - Joint Program Manager – Installation Protection Program

OFFICE OF THE JOINT CHIEFS OF STAFF

- Joint Staff J-7
- Joint Requirements Office for CBRN Defense (J-8)
 - Combatting WMD Issues Functional Capabilities Board
 - Joint Training Functional Capabilities Board
- National Defense University - Center for the Study of WMD
- National Guard Bureau J3 - DO/FO

ARMY

- U.S. Army Training and Doctrine Command
- U.S. Army Research Development and Engineering Command
- U.S. Army ARDEC/ASEC
- Army Knowledge Online / Defense Knowledge Online (AKO/DKO)
- U.S. Army Corps of Engineers, Engineer Research and Development Center
- Office of the Army Surgeon General
- U.S. Army Soldier Biological Chemical Command
- HQDA, G-3/5/7, DAMO-TR
- U.S. Army Nuclear and Combating Weapons of Mass Destruction Agency
- Army Schools and Research Centers
 - U.S. Army Medical Department Center and School
 - U.S. Army Medical Research Institute of Chemical Defense (USAMRICD)
 - U.S. Army Medical Research Institute for Infectious Disease (USAMRIID)
 - U.S. Army Chemical School
 - Edgewood Chemical and Biological Center (ECBC)

NAVY

- Chief of Naval Operations
- Chief of Naval Education and Training (CNET)
- Commander, Naval Installations Command (N7)
- U.S. Navy Program Management Office for Chemical and Biological Defense
- U.S. Navy Warfare Development Command
- U.S. Navy Surface Warfare Development Group

- U.S. Navy Air Warfare Command (N88)
- U.S. Navy Bureau of Medicine and Surgery (BUMED)
- U.S. Navy Medicine Office of Contingency Support (NMOCS)
- U.S. Navy METC
- Navy Knowledge Online (NKO)
- Naval Facilities Engineering Command
- Naval Sea Systems Command
- Navy Schools and Research Commands
 - Chief of Naval Education and Training
 - Naval Surface Warfare Center Dahlgren

MARINE CORPS

- HQMC, Deputy Commandant for Combat Development and Integration (Marine Corps lead for this effort)
- HQMC, Plans, Policies & Operations
- Marine Forces Command CBRND/CBRNE
- Marine Corps Training and Education Command
 - US Marine Corps CBRN Defense Training and Education Center of Excellence

AIR FORCE

- Headquarters, U.S. Air Force
 - Air Operations AF/A3/5 Operations, Plans and Requirements
 - AF/A4/7 Logistics, Installations & Mission Support
 - AF/SG Surgeon General
- Headquarters, U.S. Air Force Air Education and Training Command
- 366 TRS Det 7
- U.S. Air Force Doctrine Center
- Air Force Civil Engineering Support Agency

COMBATANT COMMANDS

- U.S. Joint Forces Command (USJFCOM)
 - Joint Knowledge Development and Distribution Capability (JKDDC)
 - Joint Warfighting Center
 - Office of the Command Surgeon, Medical Training Transformation

- U.S. Northern Command (USNORTHCOM)
 - Joint Task Force – Civil Support
 - J7
- U.S. Strategic Command (USSTRATCOM)
 - Center to Combat Weapons of Mass Destruction (SCC-WMD)
 - Center for Combating Terrorism
- European Command (EUCOM)
- Pacific Command (PACOM)
- Central Command (CENTCOM)

DEFENSE AGENCIES, ACTIVITIES AND FIELD OPERATING AGENCIES

- Defense Threat Reduction Agency (DTRA)
 - Defense Threat Reduction University (DTRU)
 - Defense Nuclear Weapons School (DNWS)
 - Joint Science and Technology Office (Chemical and Biological Defense)
 - TRA/CW-CAC
 - DTRA/SCC
- Defense Medical Readiness Training Institute (DMRTI)
 - Defense Medical Readiness Training and Education Council
- Uniformed Services University of Health Sciences (USUHS)
- Armed Forces Radiobiology Research Institute
- Center for Disaster and Humanitarian Assistance Medicine
- Chemical Materials Agency
- JSCBIS

OTHER

- Department of Energy
 - Lawrence Livermore National Laboratory
 - Y-12 National Security CB Center
- U.S. Department of Commerce, Bureau of Industry & Security

WORKING GROUPS, STUDY GROUPS, ETC.

- Education and Training Integration Council (ETIC)
- Homeland Security/Defense Education Council (HSDEC)

- Interservice Training Review Organization (ITRO)
- Joint Training Working Group (JTWG – sponsored by the JPEO)
- Military Education Coordination Council (MECC)
- Medical Education and Training Committee (METC)
- Military Medical Education and Training Stakeholders Working Group

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Appendix C

NCB PASSIVE DEFENSE STUDIES

NCB PASSIVE DEFENSE STUDIES

This appendix summarizes studies that have focused on NCB passive defense and/or military education and training for NCB. While not all-inclusive, it indicates some of the areas that have been focused on and considered important in the NCB doctrine, education, training, and certification realms.

NCB STUDIES TIMELINE

1991

Report Number GAO/NSIAD 91-197 – CHEMICAL WARFARE: Soldiers Inadequately Equipped and Trained to Conduct Chemical Operations. Report to Congressional Requesters. United States Government Accountability Office.

1992

Chemical Corps Training Effectiveness Analysis. Revision. Army TRADOC [Training and Doctrine Command] White Sands Missile Range.

1996

Report Number GAO/NSIAD-96-103 – CHEMICAL AND BIOLOGICAL DEFENSE: Emphasis Remains Insufficient to Resolve Continuing Problems. Report to Congressional Requesters. United States Government Accountability Office.

The Impact of NBC Proliferation on Doctrine and Operations. National Defense University.

1998

Report Number 98-174 – Unit Chemical and Biological Defense Readiness Training. Inspector General, Department of Defense.

2000

Report Number GAO/NSIAD-00-97 – WEAPONS OF MASS DESTRUCTION: DOD's Actions to Combat Weapons Use Should be More Integrated and Focused. Report to the Chairman and Ranking Minority Member, Committee on Armed Services, House of Representatives. United States Government Accountability Office.

2001

Report Number GAO-01-27 – CHEMICAL AND BIOLOGICAL DEFENSE: Units Better Equipped, but Training and Readiness Reporting Problems Remain. Report to the Chairman, Committee on Armed Services, House of Representatives. United States Government Accountability Office.

2002

Cross Service Identification of Chemical, Biological, Radiological, Nuclear, and (High Yield) Explosives (CBRNE) Training Commonalities and GAP Analysis Report. Defense Medical Readiness Training Institute.

Report Number GAO-02-38 – CHEMICAL AND BIOLOGICAL DEFENSE: DoD Needs to Clarify Expectations for Medical Readiness. Report to the Chairman, Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform, House of Representatives. United States Government Accountability Office.

2003

Chemical, Biological, Radiological, Nuclear and (High-Yield) Explosives (CBRNE) Training – Standards of Proficiency and Metrics. Defense Medical Readiness Training Institute.

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2004

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2005

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NAVSEA Strategic Approach to CBR Training.

Report Number GAO-05-8 – CHEMICAL AND BIOLOGICAL DEFENSE: Army and Marine Corps need to Establish Minimum Training Task and Improved Reporting for Combat Training Centers. Report to the Chairman, Subcommittee on National Security, Emerging Threats and International Relations, Committee on Government Reform, House of Representatives. United States Government Accountability Office.

2006

Defining “Weapons of Mass Destruction”. Occasional paper, National Defense University. Carus, W. Seth.

Report Number GAO-06-498 – Homeland Defense: National Guard Bureau Needs to Clarify Civil Support Teams’ Mission and Address Management Challenges. Report to the Chairman, Subcommittee on National Security, Emerging Threats, and International Relations, Committee on Government Reform, House of Representatives. United States Government Accountability Office.

2007

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NAVSEA Strategic Approach to CBR Training – Recommendations Update.

Report Number GAO-07-113 – CHEMICAL AND BIOLOGICAL DEFENSE: Updated Intelligence, Clear Guidance, and Consistent Priorities Needed to Guide Investments in Collective Protection. Report to the Ranking Minority Member, Subcommittee on National Security and International Relations, Committee on Oversight and Government Reform, House of Representatives. United States Government Accountability Office.

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on Oversight and Government Reform, House of Representatives. United States Government Accountability Office.

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Appendix D

INDIVIDUAL, UNIT, AND NCB SPECIALIST (NON-MEDICAL) NCB PASSIVE DEFENSE DOCTRINE, EDUCATION, TRAINING, AND CERTIFICATION

APPENDIX AVAILABLE FROM AUTHORS UPON REQUEST

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Appendix E

NCB SPECIALIST (MEDICAL) NCB PASSIVE DEFENSE DOCTRINE, EDUCATION, TRAINING, AND CERTIFICATION

APPENDIX AVAILABLE FROM AUTHORS UPON REQUEST.

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Appendix F

ACRONYMS AND ABBREVIATIONS

ACRONYMS AND ABBREVIATIONS

3E9	Air Force Specialty Readiness, Emergency Management
AAR	After Action Review
AB	Air Base
ACCA	Aircrew Contaminated Control Areas
ACEP	Army's AMEDD CBRN Exercise Program
AF	Air Force
AFCFM	Air Force Career Field Manager
AFDD	Air Force Doctrine Directive
AFH	Air Force Handbook
AFI	Air Force Instruction
AFJMAN	Air Force Joint Manual
AFM	Air Force Manual
AFMAN	Air Force Manual
AFPAM	Air Force Pamphlet
AFPD	Air Force Policy Directive
AFRRI	Armed Forces Radiobiology Research Institute
AFS	Air Force Specialty
AFTL	Air Force Task List
AFTTP	Air Force Tactics, Techniques, and Procedures
AIT	Advanced Individual Training
ALARACT	All Army Activities
ALS	Airmen Leadership Schools
AMEDD	Army Medical Department
AMEDDCS	Army Medical Department Center and School
AMETL	Agency Mission Essential Task List
ANCOC	Advanced Non-Commissioned Officers Course
ANG	Air National Guard
AOC	Air and Space Operations Center
APG	Aberdeen Proving Ground

APOD	Aerial Ports of Debarkation
APOE	Aerial Ports of Embarkation
AR	Army Regulation
ASBC	Air & Space Basic Course
ASD(HA)	Assistant to the Secretary of Defense for Health Affairs
ATG	Afloat Training Group
AT&L	Acquisitions, Technology, and Logistics
ATSD	Assistant to the Secretary of Defense
AUTL	Army Universal Task List
AWSDEP	Amphibious Warfare School Distance Education Program
AWT	Army Warrior Task
BCT	Basic Combat Training
BCTP	Battle Command Training Program
BECC	Basic Engineering Common Core
BE	Bioenvironmental Engineering
BER	Bioenvironmental Engineering Readiness
BIDS	Biological Integrated Detection System
BMT	Basic Military Training
BMTS	Basic Military Training School
BNCOC	Basic Non-Commissioned Officers Course
BOLC	Basic Officers Leader Course
BSL	Biological Safety Level
BUMED	Navy Bureau of Medicine
BUMEDINST	Navy Bureau of Medicine Instruction
BW	Biological Warfare
BWA	Biological Warfare Agents
C2	Command and Control
C ³	Chemical, Biological, Radiological and Nuclear Captain's Career Course (also CBRNC ³)
CALL	Center for Army Lessons Learned
CANTRAC	Catalog of Naval Training Courses
CB	Chemical and Biological
CBA	Capabilities Based Assessment

CBDP	Chemical Biological Defense Program
CBIRF	Chemical-biological incident response force
CBR	Chemical, Biological, and Radiological
CBR-D	Chemical, Biological, and Radiological Defense
CBRN	Chemical, Biological, Radiological and Nuclear
CBRNC ³	Chemical, Biological, Radiological and Nuclear Captain's Career Course (also C ³)
CBRNE	Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives
CBW	Chemical Biological Warfare
CCA	Contamination Control Areas
C-CBRN	Counter-Chemical, Biological, Radiological, and Nuclear
CE	Civil Engineering
CENTCOM	Central Command
CERF-P	CBRN enhanced response force package
CEU	Continuing Education Units
CFETP	Career Field Education and Training Plan
CGIP	Command General Inspection Program
CIP	Critical Infrastructure Protection
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CJCSM	Chairman of the Joint Chiefs of Staff Memorandum
CME	Continuing Medical Education
CMF	Career Management Field
CMWD	Countermeasures Washdown
CNIINST	Commander Navy Installations Command Instruction
COE	Continuum of Education
COMNAVSURFORINST	Commander, Naval Surface Forces Instruction
CONOP	Contingency Public Health Operations
CONOPS	Concept of Operations; Contingency Operations
COOP	Continuity of Operations
COT	Commissioned Officers Course
CP	Collective Protection

CPS	Collective Protection System
CSCDEP	Command and Staff College Distance Education Program
CSFE	Center for Seabees and Facilities Engineering
CTC	Combat Training Center
CW	Chemical Warfare
CWA	Chemical Warfare Agents
CWO	Chief Warrant Officer
CY	Calendar Year
DA	Department of Army
DC	Damage Control
DCA	Damage Control Assistant
DCS	Deputy Chief of Staff
DCTT	Damage Control Training Team
DECON	Decontamination
DL	Distance Learning
DMAT	Disaster Medical Assistance Team
DMRTEC	Defense Medical Readiness Training and Education Council
DMRTI	Defense Medical Readiness Training Institute
DNI	Director of Naval Intelligence
DoD	Department of Defense
DODD	Department of Defense Directive
DOTMLPF	Doctrine, Organization, Training, Materiels, Leadership and Education, Personnel, and Facilities
DPOS	Disaster Preparedness Operations Specialist (Course)
DSCA	Defense Support to Civil Authorities
DTRA	Defense Threat Reduction Agency
DVATEX	Disaster Preparedness, Vulnerability Analysis, Training and Exercise
EBC	Echelons below Corps
ECBC	Edgewood Chemical Biological Center
EET	Exercise Evaluation Team
EJPME	Enlisted Joint Professional Military Education

ELT	Entry-Level Training
EM	Emergency Management
EMPRC	Emergency Medical Preparedness and Readiness Course
EOD	Explosive Ordnance Disposal
EODMU	Explosive Ordnance Disposal Mobile Unit
EOR	Explosive Ordnance Response
EPA	Environmental Protection Agency
EPME	Enlisted Profession Military Education
EPOC	Engineer Plant Operator Common
ETIC	Education and Training Integration Council
EUCOM	European Command
EWSDEP	Expeditionary Warfare School Distance Education Program
EXEVAL	External Evaluation
FCBC	Field Management of Chemical and Biological Casualties (Course)
FCC	Federal Coordinating Centers
FHPC	Force Health Protection Council
FLC	Functional Learning Center
FLTCINC	Fleet Commander in Chief
FM	Field Manual
FMFM	Fleet Marine Field Manual
FPCON	Force Protection Conditions
FSIC	Formal School Instructor Course
FTX	Field Training Exercise
GAO	Government Accountability Office
G/FO	General/Flag Officer
GMS	General Military Skills
H.R.5122	National Defense Authorization Act for Fiscal Year 2007 (House of Representatives Bill)
HAZMAT	Hazardous Materials
HAZWOPPER	Hazardous Work Operations and Emergency Responses
HQDA	Headquarters, Department of the Army
HSS	Health Service Support

HTA	High Threat Area
IED	Improvised Explosive Device
IET	Initial Entry Training
ILE	Intermediate Level Education
IMS	Instructional Management School
IPE	Individual Protective Equipment
ISS	Individual Survival Standards
ITS	Individual Training Standards
JBPDS	Joint Biological Point Detection System
JFCOM	Joint Forces Command
JDEIS	Joint Doctrine Education and Training Electronic Information System
JFS	Joint Force Surgeon
JKDDC	Joint Knowledge Development and Distribution Capability
JMRC	Joint Multinational Readiness Center
JP	Joint Publication
JPME	Joint Professional Military Education
JRO	Joint Requirements Office
JRTC	Joint Readiness Training Center
JSAP	Joint staff action processing
JSFDS	Joint Service Family of Decontamination Systems
JSLIST	Joint Service Lightweight Integrated Suit Technology
JTFS	Joint Task Force Surgeon
LLR	Low Level Radiation
LTA	Low Threat Area
LVH	Low-Volatility Hazard
MAGTF	Maine Air Ground Task Force
MCAGCC	Marine Corps Air Ground Combat Center
MCBC	Medical Management of Chemical and Biological Casualties (Course)
MCCS	Marine Corps Common Skills
MCI	Marine Corps Institute
MCO	Marine Corps Order

MCRD	Marine Corps Recruiting Depot
MCRP	Marine Corps Reference Publication
MCT	Marine Combat Training
MCTFS	Marine Corps Total Force System
MCWP	Marine Corps Warfighting Publication
MEDCOM	Army Medical Command
MEIR	Medical Effects of Ionizing Radiation (Course)
METL	Mission Essential Task List
METT-TC	Mission, Equipment, Troops, Terrain, and Time available and Civilian
MNBC	Medical Nuclear, Biological, and Chemical (Operations Course)
MOA	Memo of Agreement
MOPP	Mission Oriented Protective Posture
MOS	Military Occupational Specialty
MRIC	Medical Readiness Indoctrination Course
MTA	Medium Threat Area
MTF	Medical Treatment Facility
MTP	Mission Training Plan
MTTP	Multi-Service Tactics, Techniques, and Procedures
NATO	North Atlantic Treaty Organization
NATOPS	Naval Air Training and Operating Procedures Standardization
NAVAIR	Naval Air
NAVEDTRA	Navy Education and Training
NAVMED	Navy Medicine
NBC	Nuclear, Biological, and Chemical
NBC-D	Nuclear, Biological, and Chemical Defense
NBCD T&R	NBC Defense Training and Readiness
NBCDO	NBCD Officer
NBCWRS	NCB Warning and Reporting System
NCB	Nuclear, Chemical, and Biological
NCO	Non-Commissioned Officer

NDMS	National Disaster Medical System
NDU	National Defense University
NEC	Navy Enlisted Classification
NECC	Naval Expeditionary Combat Command
NEO	Non-Combatant Evacuation Operations
NKO	Navy Knowledge Online
NORTHCOM	Northern Command
NSTM	Navy Ship Technical Manual
NTA	Non Tradition Agents
NTC	National Training Center
NTRP	Navy Tactical Reference Publication
NTTP	Naval Tactics, Techniques, and Procedures
NWP	Naval Warfare Publication
OBC	Officer Basic Course
O/C	Observer/Controller
OCS	Officer Candidate School
OES	Officer Education System
OIS	Officer Indoctrination School
OJT	On the Job Training
OP	Operational
OPFOR	Opposing Force
OPME	Officer Professional Military Education
OPMEP	Officer Professional Military Education Policy
OPNAVINST	Chief of Naval Operations Instruction
OPREP	Operations Report
OPSENS	Operational Sense
OPSHA	Operational Shape
OPSHLD	Operational Shield
OPSUST	Operational Sustain
ORE	Operation Readiness Exercises
ORM	Operational Risk Management
OSHA	Occupational Safety and Health Administration
OSUT	One Station Unit Training

P&R	Personnel and Readiness
P3I	Preplanned Product Improvement
PA	Physician's Assistant
PACAF	Pacific Air Forces
PCR	Polymerase Chain Reaction
PHEO	Public Health Emergency Officer
PHO	Public Health Officer
PME	Professional Military Education
POI	Program of Instruction
POW	Prisoners of War
PPE	Personal Protective Equipment
PQS	Personnel Qualification Standards
PST	Performance Support Tool
QDR	Quadrennial Defense Review
RADIAC	Radiation, Detection, Indication, and Computation
RAPID	Research with Adaptive Particle Imaging Detectors
RC	Reserve Component
ROTA	Release Other Than Attack
ROTC	Reserve Officer Training Corps
RRT	Rapid Response Team
RSVP	Readiness Skills Verification Program
RTC	Recruit Training Command
RTF	Response Task Force
SABC	Self-Aid and Buddy Care
SAT	Systems Approach to Training
SEDC	Senior Enlisted Damage Control
SEL	Senior Enlisted Leader
SEQ	Sequence Number
SITREP	Situation Report
SM	Soldier's Manual
SMART	Special Medical Assistance and Response Team
SMC	Sergeants Major Course
SME	Subject-Matter Expert

SN	Strategic National
SNSENS	Strategic National Sense
SNSHA	Strategic National Shape
SNSHLD	Strategic National Shield
SNSHLD	Strategic Theater Shield
SNSUST	Strategic National Sustain
SOF	Special Operations Forces
SOP	Standard Operating Procedure
SORTS	Status of Resources and Training System
SSE	Sensitive Site Exploitation
ST	Strategic Theater
STP	Soldier Training Publication
STRATCOM	Strategic Command
STSENS	Strategic Theater Sense
STSHA	Strategic Theater Shape
STSUST	Strategic Theater Sustain
SURFFORTRAMAN	Surface Forces Training Manual
SWOS	Surface Warfare Officers School
T2	Training Transformation
T&E	Test and Evaluation
T&EO	Training & Evaluation Outline
T&R	Training and Readiness
TA	Tactical
TASENS	Tactical Sense
TASHA	Tactical Shape
TASHLD	Tactical Shield
TASUST	Tactical Sustain
TBS	The Basic School (U S Marine Corps)
TCTC	Tri-Service CBRN Training Committee
TIM	Toxic Industrial Materials
TOPOFF	Top Officials Exercise
TQT	Task Qualification Training
TRADOC	Training and Doctrine Command

TTP	Tactics, Techniques, and Procedures
TTX	Tabletop exercise
TYCOMS	Type Commanders
U.S.	United States
UJTL	Universal Joint Task List
UNTL	Uniform Navy Task List
USA	United States of America
USACMLS	U.S. Army Chemical School
USAFSAM	U.S. Air Force School of Aerospace Medicine
USAMRICD	U.S. Army Medical Research Institute for Infectious Diseases
USAMRIID	U.S. Army Medical Research Institute of Chemical Defense
USANCA	U.S. Army Nuclear and Chemical Agency; U.S. Army Nuclear and Combating WMD Agency
USAWC	U.S. Army War College
USD	Under Secretary of Defense
USMC	U.S. Marine Corps
USNA	United States Naval Academy
USUHS	Uniformed Services University of Health Services
UTA	Unit Training Activity
UXO	Unexploded Ordnance
WOBC	Warrant Officer Basic Course
WDTC	West Desert Testing Center
WLC	Warrior Leaders Course
WMD	Weapons of Mass Destruction
WMD/E	Weapons of Mass Destruction Effects
WMD/T	Weapons of Mass Destruction and Terrorist
WMD-CST	Weapons of Mass Destruction Civil Support Team

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Appendix G

REFERENCES

REFERENCES

References listed in this appendix were used as sources for this research although they may not be specifically cited in the paper. Some are included in their entirety as annexes to this document. Information about the references and the material presented are available from the authors upon request.

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14. ABSTRACT House Report 109-452 on the National Defense Authorization Act of 2007 (P.L. 109-364) directs the Assistant to the Secretary of the Department of Defense (DoD) for Nuclear, Chemical, and Biological (NCB) Defense, in coordination with the Service Secretaries, to 1) review NCB passive defense doctrine across each of the military Services; 2) perform a gap analysis on nuclear, chemical, and biological (NCB) defense training; and 3) make recommendations for NCB defense for both the Active and Reserve components regarding: implementation of Joint training, certification, and doctrinal alignment. This work is to be done in coordination with the Secretaries of the Army, Navy, and Air Force. This paper reviews NCB passive defense doctrine, education and training (E&T) activities, and certification processes across the services, and indicates gaps and recommendations to facilitate NCB passive defense education and training.					
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